Service Source

iMac (24-inch Mid 2007)

August 2007

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iMac (24-inch Mid 2007)

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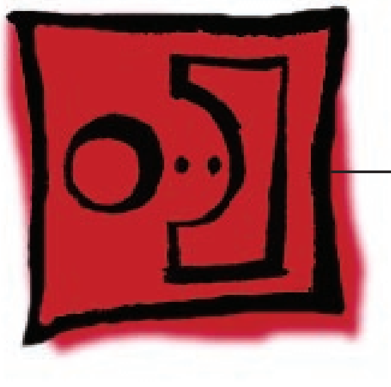
Service Source



Take Apart

iMac (24-inch Mid 2007)

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General Information

Product View

Opening the Computer

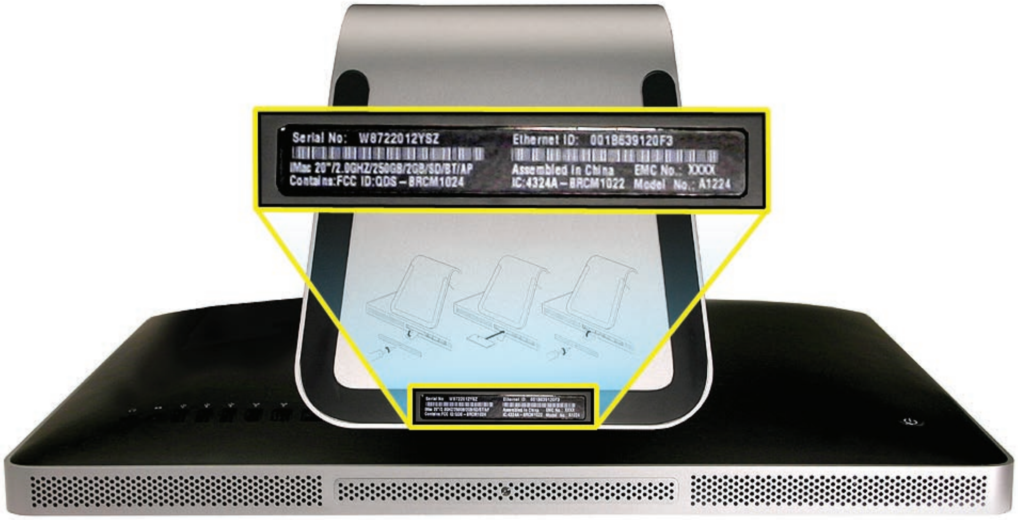
Important: The glass panel on the iMac should only be removed by Apple authorized technicians. Removing the glass panel requires special tools and must be done prior to replacing any module other than the SO-DIMMs. Be sure to read and follow all of the handling and cleaning recommendations to prevent damaging the LCD panel. Be sure to follow ESD-safe repair practices when the front bezel and the LCD display are removed.

Note About Images in This Manual

Small differences in appearance between the images pictured and the actual computer you are servicing may exist, however the steps and sequence are the same unless otherwise noted.

Serial Number Location

On the bottom of your iMac stand, you'll find a label with the serial number printed on it.


Serial No: W8722012YSZ
Ethernet ID: 0018639120F3
iMac 20"/2.0GHZ/250GB/2GB/SD/BT/AP
Assembled in China EMC No.: XXXX
Contains:FCC ID:QDS – BRCM1024
IC:4324A – BRCM1022 Model No.: A1224

This label also provides the computer configuration and an "EMC" number (EMC No.).

To confirm the configuration from the Apple menu, choose About This Mac. The Processor listing will show the speed of the processor followed by the processor type.

The iMac (24-inch, 2007) has several features that distinguish it from earlier iMac models:

- 2.4 GHz Intel Core 2 Duo processor (CTO option: 2.8 GHz Core 2 Duo)
- ATI Radeon HD 2600 Pro with 256 MB GDRR3 VRAM
- 24-inch widescreen flat panel display (1920x1200 native resolution)
- 320 GB hard disk (CTO options : 500 GB or 750 GB)
- 1 GB (1x 1GB) 667 MHz with support up to 4.0 GB system memory
- Built-in stereo speakers with internal 24-watt digital amplifier
- New Apple keyboard, wired (CTO option: new Apple keyboard, wireless)

General Tools

The following tools are required to service the computer:

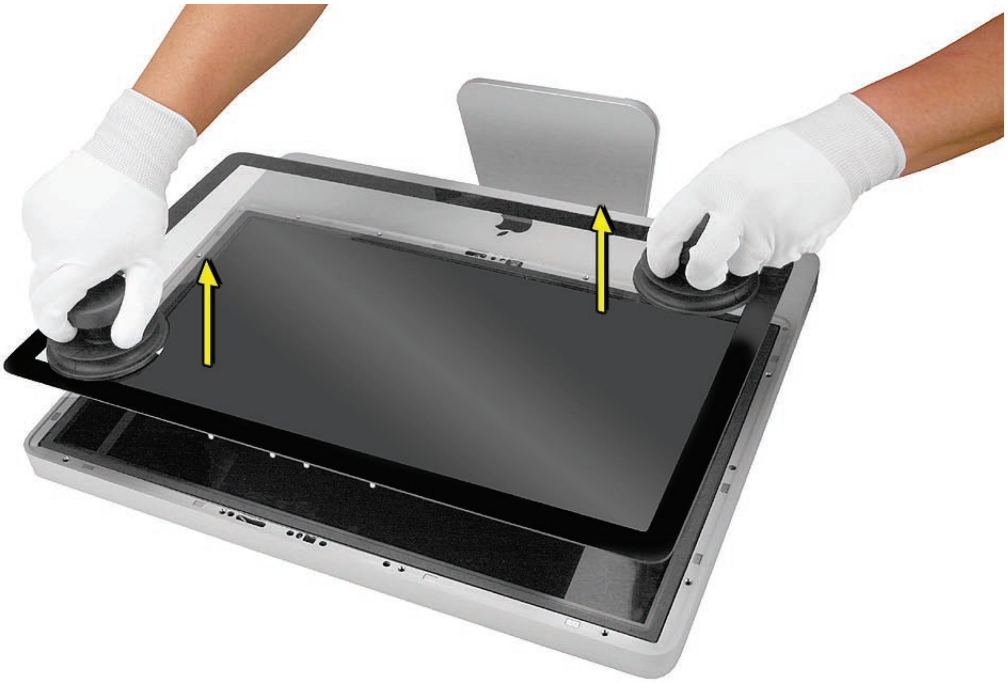
- ESD-safe workstation and mat
- Soft, clean towel or cloth (to protect the display and removed parts from scratches)
- Black stick (or other non-conductive nylon or plastic flat-blade tool)
- Phillips #1 screwdriver
- Phillips #2 screwdriver
- Torx T6 screwdriver (magnetized)
- Torx T8 screwdriver (magnetized)
- Torx T10 screwdriver (magnetized)
- Flat-blade screwdriver
- ESD bags

Required Special Tools

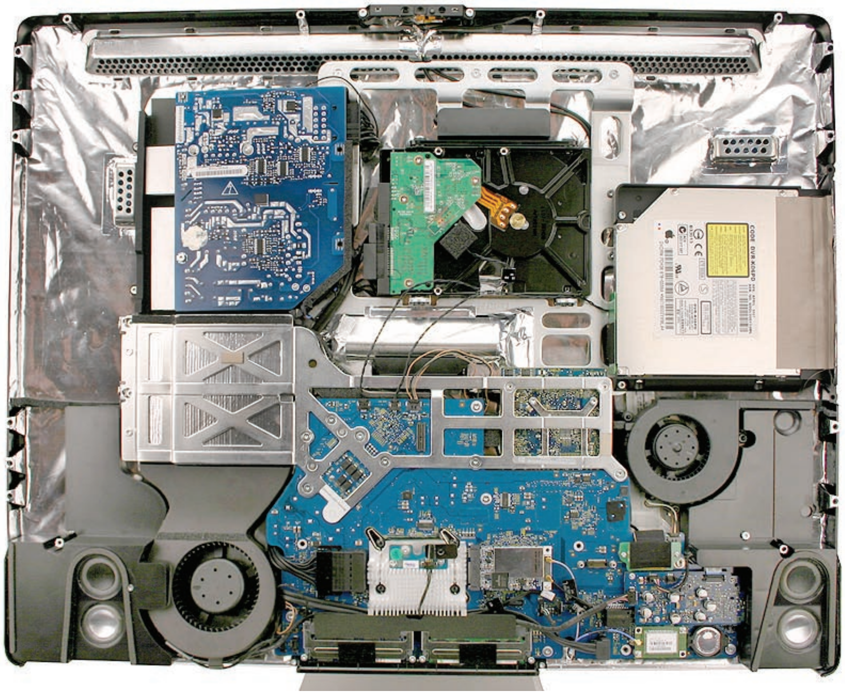
Special tools are required to remove, handle, and clean the glass panel such as the following. View the tools in the **Glass Panel** take apart chapter.

1. 922-8252 Suction cups, Pkg. of 2
2. 922-8261 Sticky silicon roller (6-inch) to clean the glass panel
3. 922-8262 Sticky sheet pads to clean the silicon roller
4. 922-8263 Polishing cloths, clean, anti-static, optical grade micro fiber "terry" style cloth
5. 922-8253 Gloves, lint-free, anti-static, Pkg. of 2
6. 922-8259 Microfoam bag to store the glass panel, Pkg. of 5
7. 922-8258 ESD bags, 24x20, Pkg. of 5, to store the LCD panel. **Note:** To prevent the buildup of static charges which may attract dust particles to the surface of the display, store the LCD panel in an anti-static bag whenever it has been removed from the system.
8. iKlear Apple Polish or Brillianize anti-static spray cleaning solution. A list of where iKlear/Brillianize can be obtained is listed in the **Glass Panel** chapter of the service manuals.

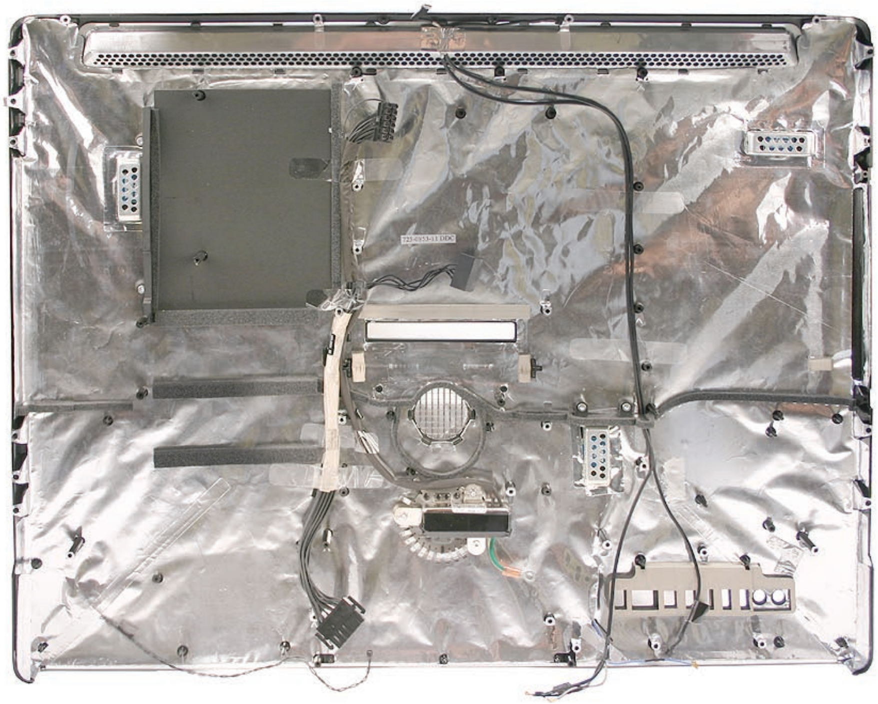
Removing the Glass Panel



View of the Main Modules



View of the Rear Housing and Cables



Cleaning and Handling the Glass Panel

Click on photo--->>

The iMac (24-inch Mid 2007) model has a glass panel that attaches to the outside of the front bezel. The glass panel is not tempered and will break into sharp pieces if mishandled. A scratched or broken glass panel is not covered under warranty. To prevent contamination, the glass panel must only be handled by the edges while wearing lint-free gloves. Removing the glass panel requires special tools and must be done prior to replacing any module other than the SO-DIMM's. Special tools such as lint-free gloves, rubber suction cups, a sticky silicon roller, microfoam storage bags, and the iKlear cleaning solution are required to remove, handle, and clean the glass panel. The complete list of tools and resources can be found in the **Glass Panel** take apart chapter.

DO

- Handle glass panel using lint free gloves.
- Use only a sticky silicon roller to clean the inside surface of the glass and the LCD panel.
- Use iKlear to clean **ONLY** the outside surface of the glass panel.
- Place the glass panel into a clean protective microfoam bag when it is not installed on an iMac.
- Store the glass panel in a safe area where it will not be broken or damaged.
- Store the LCD panel in an anti-static bag to prevent the buildup of static charges which may attract dust particles to the display's surface.

DO NOT

- Touch the inside of the glass with bare hands or dirty gloves. Difficult to remove fingerprints will result.
- Clean the inside surface of the glass or the LCD with iKlear or other cleaning solutions.
- Place the glass panel onto a work surface where it may collect dust and other contaminants unless it has first been placed into its protective microfoam bag.
- Use single wipe iKlear packets or other cleaning solutions to clean the glass.

Handling a Broken Glass Panel

The glass panel is not tempered and will break into sharp pieces if mishandled.

If the glass is broken it must be carefully removed from the iMac to prevent irreparable damage to the front surface of the LCD. If the front surface of the LCD is scratched by the broken glass the LCD may need to be replaced.

Do not handle broken glass unless you are wearing protective cut-resistant gloves. The lint-free gloves used to prevent contamination of the glass panel are not suitable for handling broken glass.

Use a broom and dust pan to sweep up as much of the broken glass as possible. Glass fragments may have travelled several feet from the location of the glass panel so be sure to thoroughly clean the entire area. Use a vacuum to remove the smaller fragments not picked up by the broom

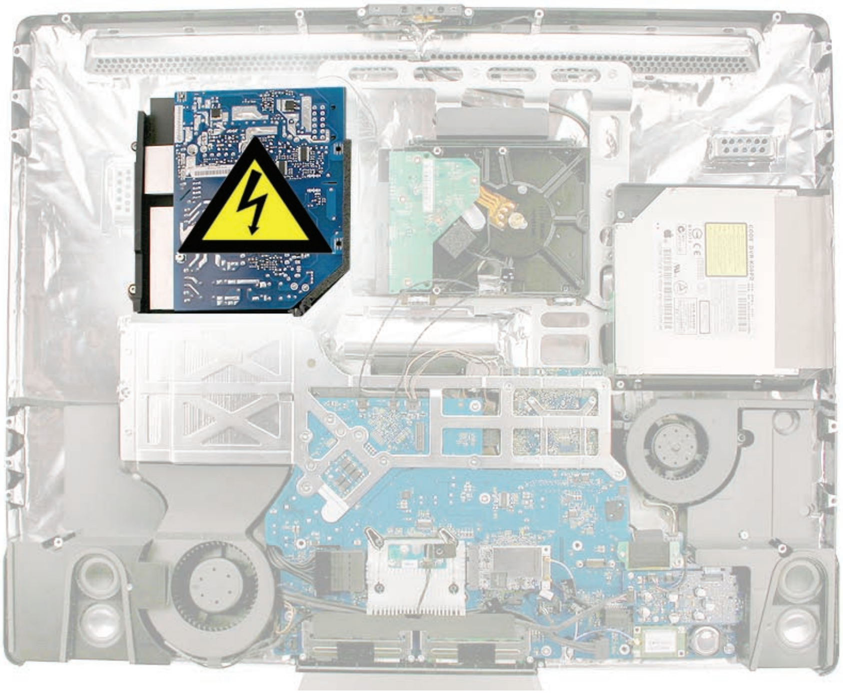
Safety

WARNING: HIGH VOLTAGE: The highlighted module below is an AC/DC power supply that poses a shock hazard. When the computer is under power, be aware that the power supply contains high voltages that pose a potential hazard to your personal safety. Never work on or near the power supply with the unit powered on; and as a further precaution, always make sure the unit is unplugged when working on it with the front bezel removed. **A white, shock- hazard warning symbol is silk-screened in the middle of the power supply module.**

WARNING:
Text or photographs marked by this symbol indicate that a potential hazard to your personal safety exists from a high voltage source.

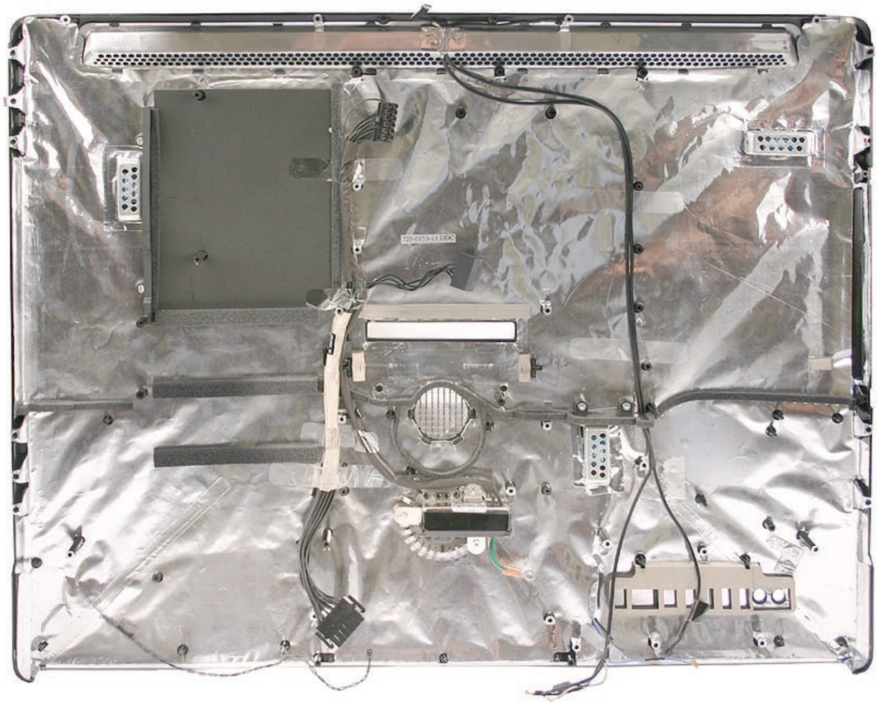
The AC/DC power supply board is a high-voltage source with the unit under power, and remains powered up whenever the system is plugged in, whether or not the system is turned on. Use extreme caution when troubleshooting the system with the front bezel removed.

- Disconnect power to the system before performing maintenance.
- Disconnect ESD wrist straps when working on a plugged in system.
- Don't work alone. In the event of an electrical shock, it is important to have another individual present who can provide assistance.
- Keep one hand in your pocket when working on any computer that is plugged in. This will help ensure that your body does not provide a path to ground in the event that you accidentally make contact with the line voltage.
- Don't wear jewelry, watches, necklaces, or other metallic articles that could present a risk if they accidentally make contact with the power supply circuitry.



EMI Shielding

The rear cover of the computer is wrapped in EMI shielding that is easily torn and damaged. To maintain a properly shielded unit, you must repair all accidental tears and cracks to the shielding by covering them with EMI tape that can be ordered from Apple service.



Access Door

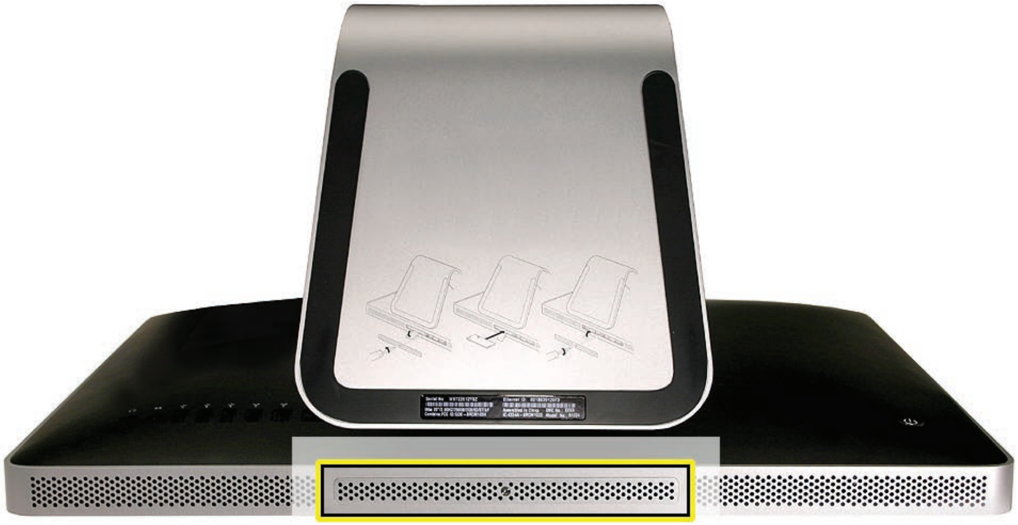
Tools

- Phillips #2 screwdriver
- ESD-safe workstation and mat
- Soft , clean towel or cloth

Preliminary Steps

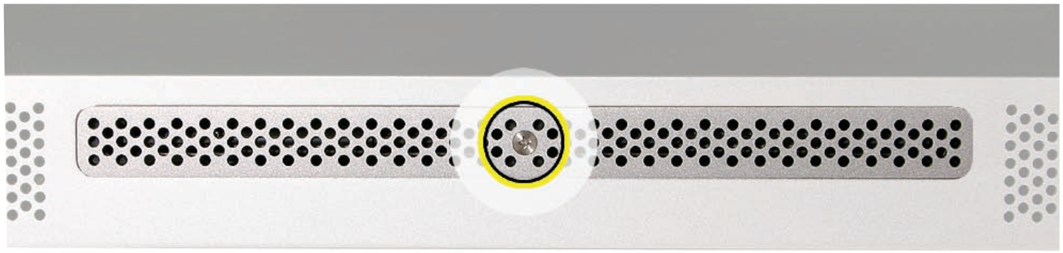
Before you begin, place the computer face down on a clean, soft, lint-free cloth so that the bottom is facing you.

Part Location



Removing the Access Door

1. Disconnect all cables and the power cord from your iMac.
2. Place a soft, clean towel or cloth on your work surface. Hold the side of the iMac and lay it down so that the screen is against the surface and the bottom is facing you.
3. Raise the stand and use a Phillips #2 screwdriver to loosen the captive screw on the memory access door by turning it counterclockwise.
4. Remove the access door.



Replacing the Access Door

1. Position the computer face down on a clean, soft, lint-free cloth so that the bottom is facing you.
2. Position the access door on the rear housing over the memory compartment.
3. Use a Phillips #2 screwdriver to tighten the captive screw.

Memory

This computer comes with a minimum of 1GB of 667 MHz PC2-5300 Double Data Rate 2 (DDR2) Small Outline Dual Inline Memory Modules (SO-DIMMs). It has two slots that can accept DIMMs. A 1 GB, or 2 GB memory module may be installed for a maximum of 4 GB of memory.

Tools

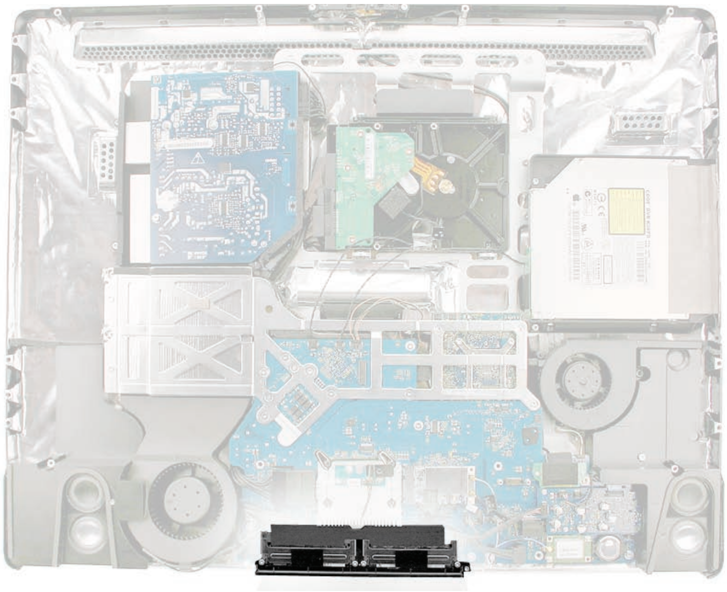
- ESD mat
- Soft , clean towel or cloth

Preliminary Steps

Before you begin, remove the **access door**.

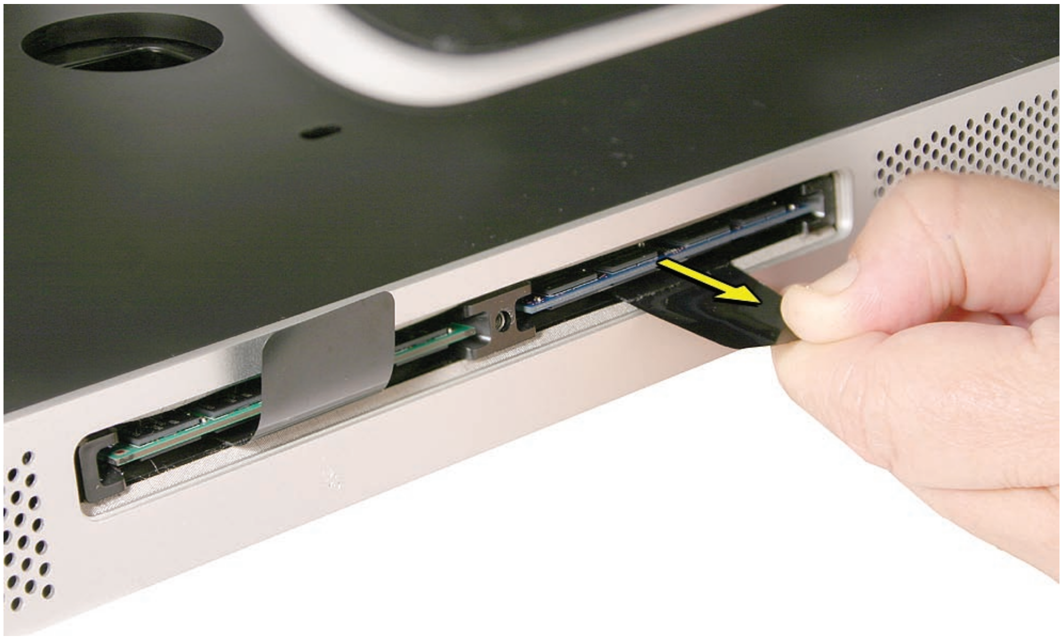
Warning: Always shut down the computer and remove the power cord before installing memory. Do not attempt to install memory in the computer while it is plugged in.

Part Location



Removing the Memory

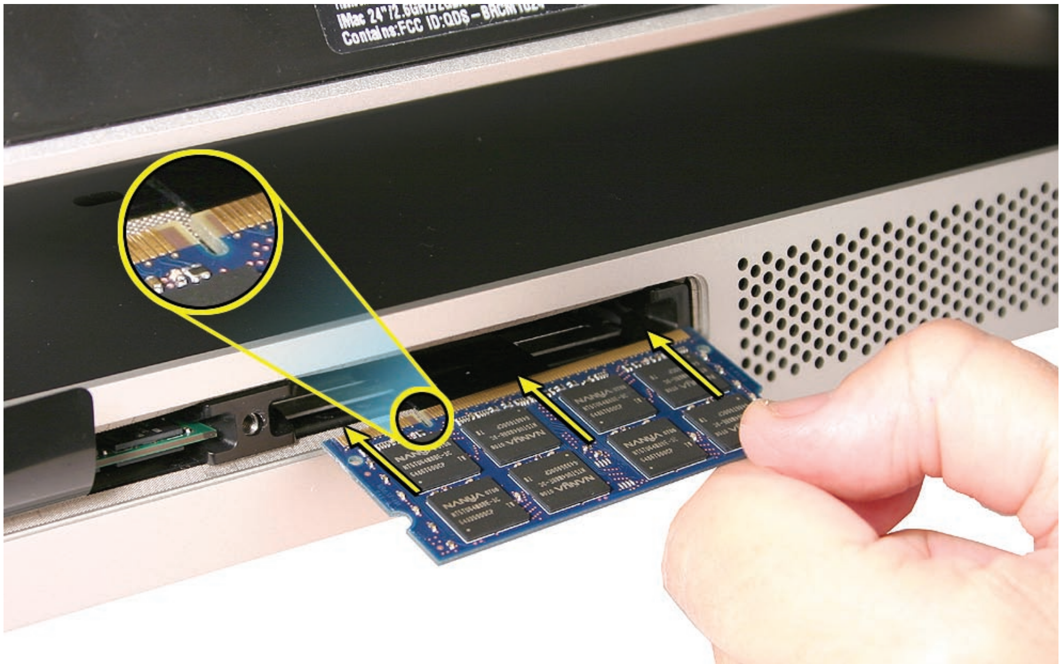
1. Shut down the computer, and disconnect all cables including the power cord.
2. Holding the sides of the computer, lay it face down on a soft, clean cloth so the stand is facing you.
3. After removing the access door, touch the metal stand or bezel to discharge any static electricity from your body.
   Important: Always discharge static before you touch any parts such as the memory board. To avoid generating static electricity, do not walk around the room until you have finished replacing the memory.
4. Untuck the tab in the memory compartment. If you are replacing a memory module, untuck the tab and pull it to eject the installed memory module.



5. Set the memory module(s) aside.

Replacing the Memory

1. With the computer face down, orient the notch on the DIMM with the notch in the memory slot. In this case, the notch is on the left.



2. With your fingers, press the DIMM fully into the slot until you hear a click. Repeat for the other DIMM slot.
3. Fold the black tab over each DIMM.
4. Replace the memory access door.
5. Use a Phillips #2 screwdriver to tighten the captive screw on the memory access door.
6. Make sure the computer recognizes the new memory by opening System Profiler, clicking More Info, and clicking Memory.

Glass Panel

Tools

This procedure requires the following tools:

- Suction cups (922-8252)
- Sticky silicon roller (6-inch) to clean the glass panel (922-8261)
- Sticky sheets to clean the silicon roller (922-8262)
- Polishing cloths, clean, anti-static, optical grade micro fiber "terry" style cloth (922-8263)
- iKlear Apple Polish or Brillianize anti-static spray cleaning solution
- Gloves, lint-free, anti-static (922-8253)
- Microfoam bag to store the glass panel (922-8259)
- ESD bag for LCD display storage (922-8258)

Note: Tools without part numbers can be sourced directly from the vendor. Refer to "**Cleaning Tool Resources**" at the end of this chapter.

Part Location

Cleaning and Handling of the Glass Panel

Click on photo--->>

The iMac (24-inch Mid 2007) model has a glass panel that attaches to the outside of the front bezel. The glass panel is not tempered and will break into sharp pieces if mishandled. A scratched or broken glass panel is not covered under warranty. To prevent contamination the glass panel must only be handled by the edges while wearing lint-free gloves. Removing the glass panel requires special tools and must be done prior to replacing any module other than the SO-DIMM's. Special tools such as lint-free gloves, rubber suction cups, a sticky silicon roller, microfoam storage bags, and the iKlear cleaning solution are required to remove, handle, and clean the glass panel.

DO

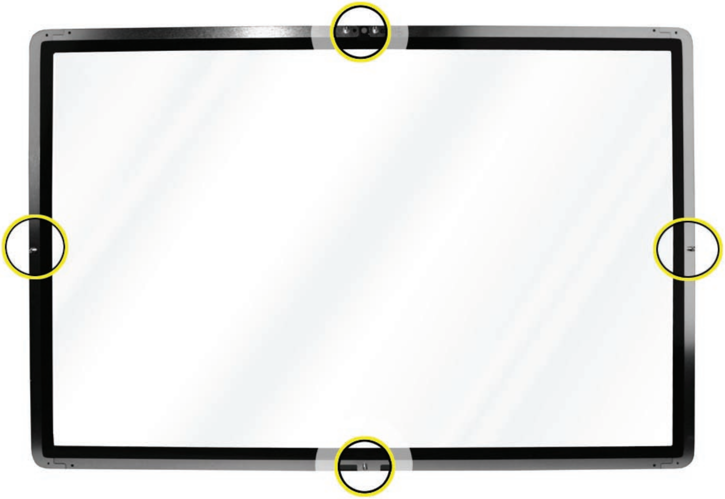
- Handle glass panel using lint free gloves.
- Use only a sticky silicon roller to clean the inside surface of the glass and the LCD panel.
- Use iKlear to clean **ONLY** the outside surface of the glass panel.
- Place the glass panel into a clean protective microfoam bag when it is not installed on an iMac.
- Store the glass panel in a safe area where it will not be broken or damaged.

DO NOT

- Touch the inside of the glass with bare hands or dirty gloves. Difficult to remove fingerprints will result.
- Clean the inside surface of the glass or the LCD with iKlear or other cleaning solutions.
- Place the glass panel onto a work surface where it may collect dust and other contaminants unless it has first been placed into its protective microfoam bag.
- Use single wipe iKlear packets or other cleaning solutions to clean the glass.

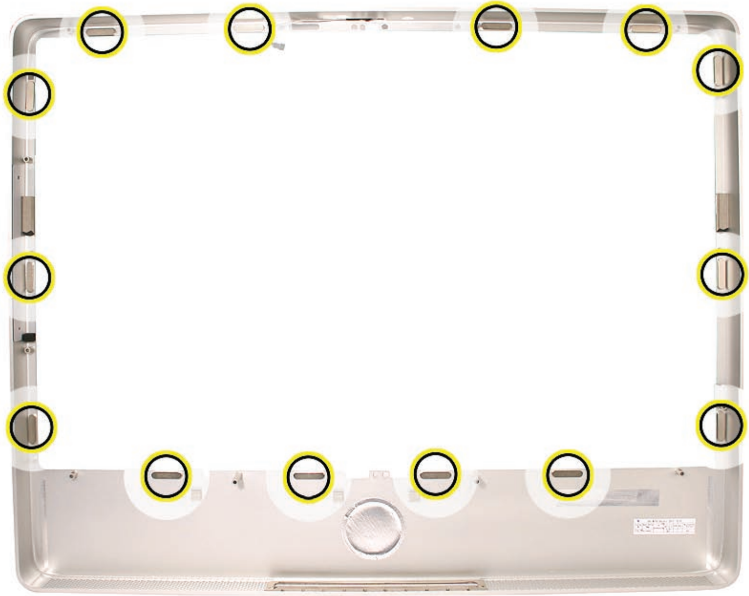
Metal Alignment Pins on the Glass Panel

There are alignment pins at the top of the glass panel near the camera, one pin at the bottom near the IR remote sensor, and a pin on the left and right side of the glass. **Important**: If the glass is removed from the bezel at an angle, the metal alignment pins may bend, causing scratches on the inside of the glass and possibly requiring replacement of the glass panel.



Magnets on the Front Bezel

The glass panel has a thin silver ferrous metal band affixed to the perimeter which is magnetically attracted to the fourteen magnets (circled below) which are attached to the front bezel. These magnets hold the glass panel in place. Suction cups are used to pull the glass panel away from the magnets on the front bezel. .



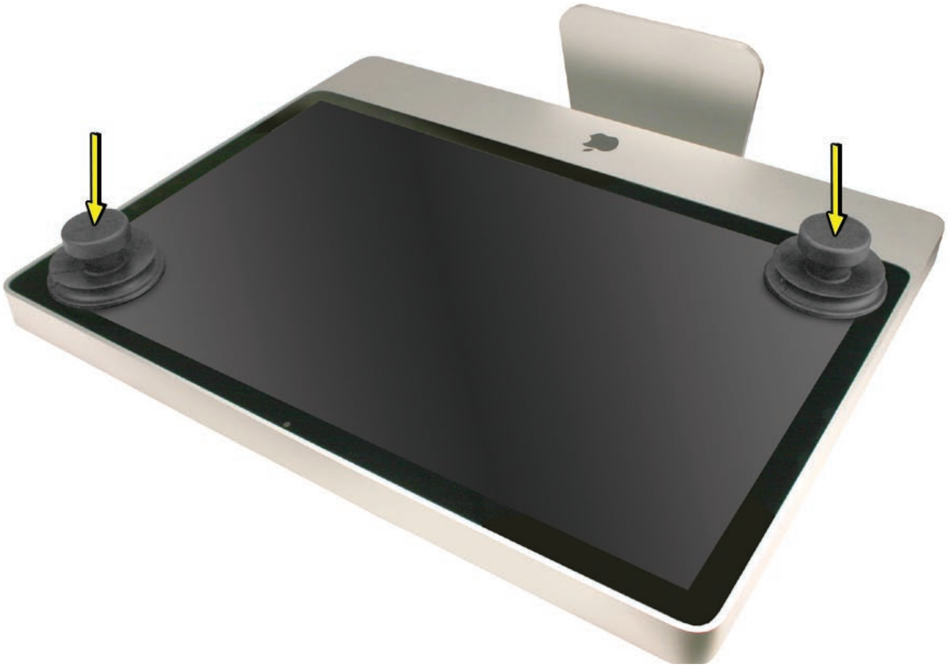
Removing the Glass Panel

1. Apple **strongly** recommends wearing clean lint-free gloves whenever handling the glass panel. The gloves protect the glass panel from body oils, dirt, and other contaminants. Put on a pair of clean gloves with the rubberized-side of the gloves on the palm side of your hand.

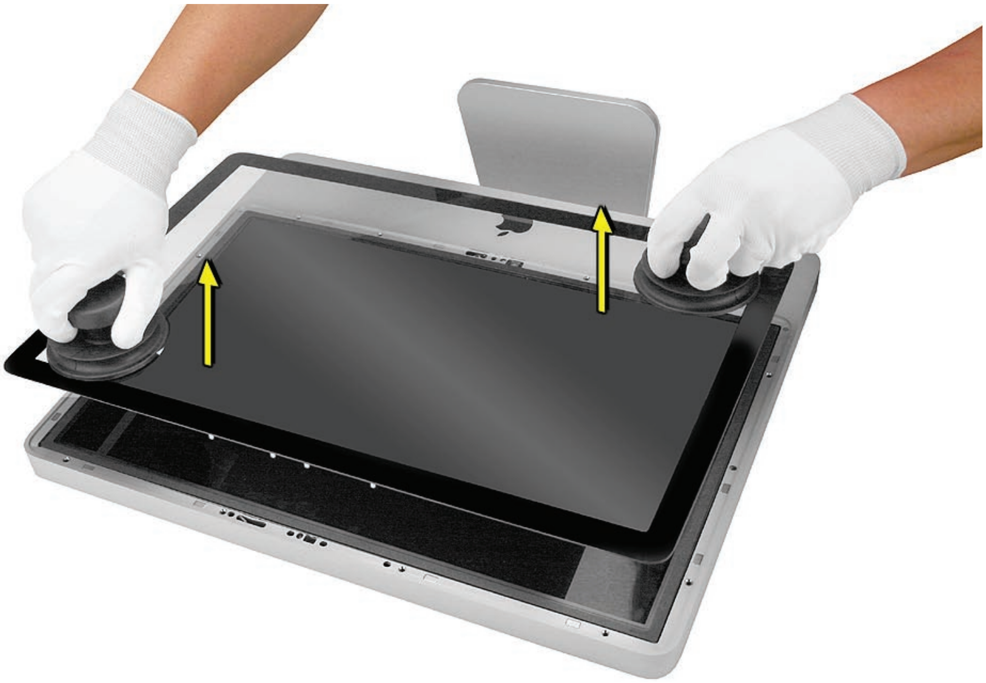
2. Position the computer on the rear cover, on a soft protective lint-free surface, with the stand facing you
3. Clean off the suction cups, making sure they are free of contaminants. It may be necessary to wash the suction cups with a mild liquid soap in order to remove the residual release agents applied during manufacturing.

4. Gently press the suction cups in opposite corners on the glass panel, as shown. **Important**: Make sure the suction cups are firmly attached to the glass before lifting the glass.

Click on photo--->>

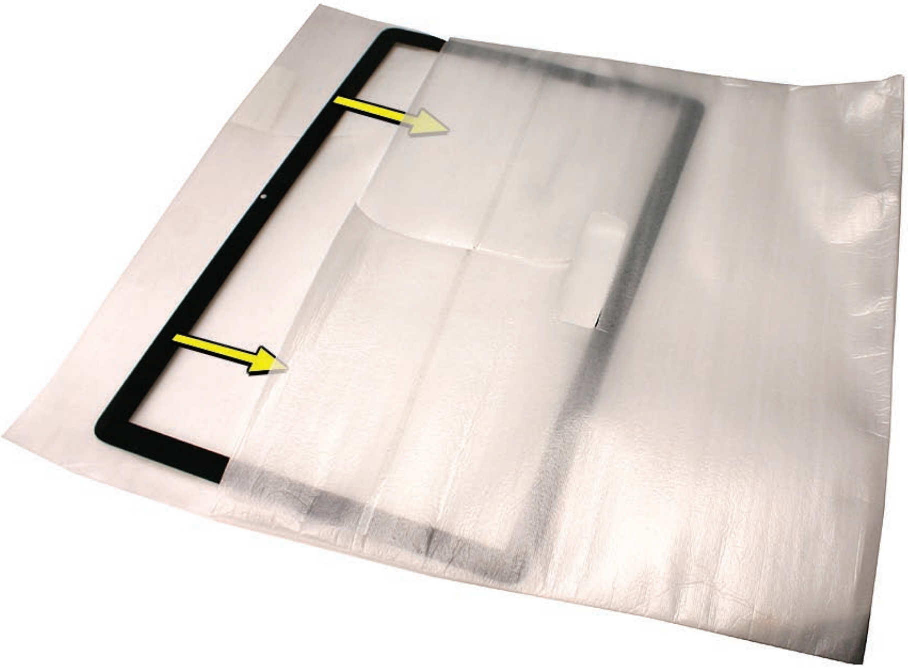


5. Hold onto the suction cups and gently lift the glass panel **straight up and off the bezel**.



6. Set the glass down on the microfoam bag or clean lint-free surface and remove the suction cups. Squeeze the base of each suction cup to release them from the glass panel.

7. Touching only the edges of the glass, slide the glass panel into the microfoam static-free bag. Set the glass aside in a location where it won't get damaged. The bag will help minimize contamination of the glass.



Replacing the Glass Panel

1. Put on a pair of clean gloves with the rubberized-side of the gloves on the palm side of your hand.

2. Install the LCD display panel onto the computer if it was removed.
3. Replace the font bezel if it was removed, connect the microphone cable and replace the bezel screws.
4. Locate the sticky silicon roller (a different model roller is shown in the procedure) and the dust removal pad. Remove the protective covering on the silicon roller and peel the protective cover off the dust removal pad.

HANSONG
DUST REMOVAL PAD
caution: do not leave roller lying on pad

5. Holding the sticky paper with your free hand, clean the silicon roller on the sticky paper by rolling the roller back and forth once or twice on the sticky paper. If the sticky paper has been used multiple times and looks dirty, use a new piece of sticky paper.

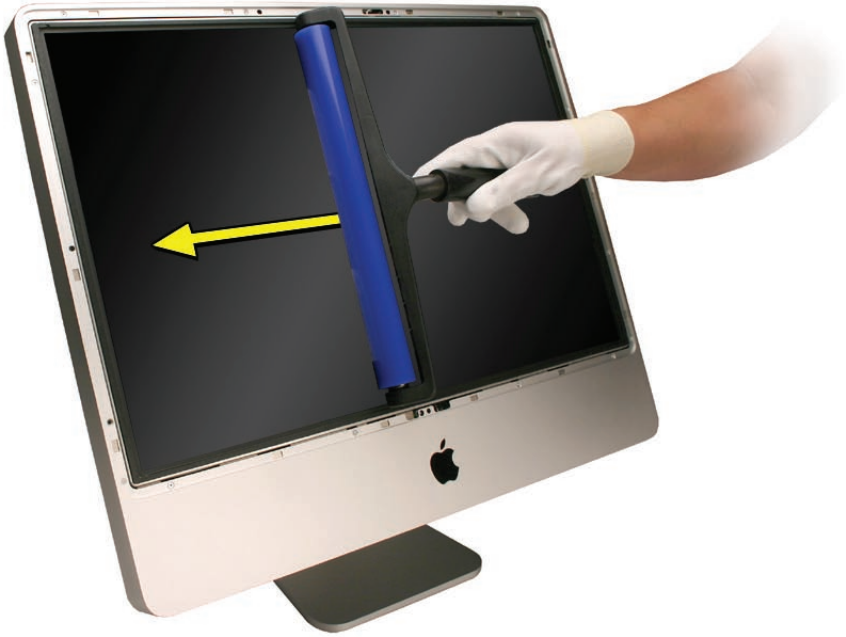
DUST REMOVAL PAD
caution: do not leave roller lying on pad

6. Set the roller aside on its clean protective cover while you prepare the glass and computer.

7. **REMINDER: WEAR CLEAN GLOVES AND ONLY HANDLE THE GLASS BY THE EDGES.**

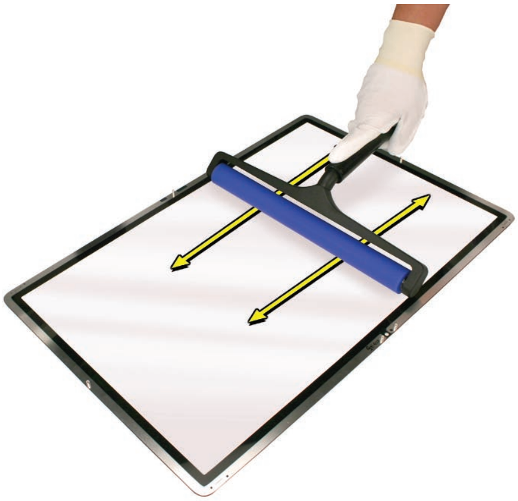
8. Stand the computer upright. **Note**: Less dust particles will settle on the LCD panel with the computer in the vertical position.

9. Roll the sticky silicon roller over the LCD panel to remove any particles. **Note**: A larger silicon roller was used for demonstration purposes, however; the 6-inch silicon roller from Apple service will suffice.

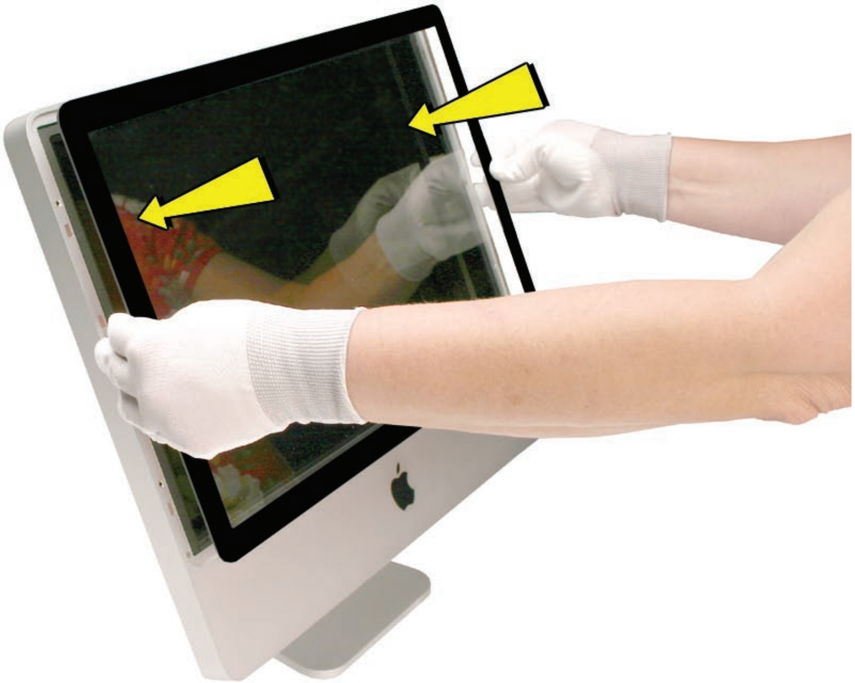


10. Remove the glass panel from the microfoam bag. Place the glass on the bag with the inside surface of the glass (side with metal pins) facing up.

11. Clean the INSIDE of the glass panel with the clean silicon roller. Gently roll the clean silicon roller over the inside of the glass. **Note**: **The glass panel is delicate and will break if too much pressure is applied.**



12. Holding the glass by the edges, carefully line up the metal pins on the inside of the glass panel with the holes at the top of the front bezel and the hole at the bottom of the bezel. Gently lower the glass panel onto the bezel. The magnets on the front bezel will pull panel and hold the glass panel in place.



13. Clean the outside of the glass panel with a clean microfiber cleaning cloth. If necessary, spray a small amount (two pumps) of iKlear polish on the outside of the glass panel. Wipe the glass until the solution completely disappears and there is no longer any residue or haze.

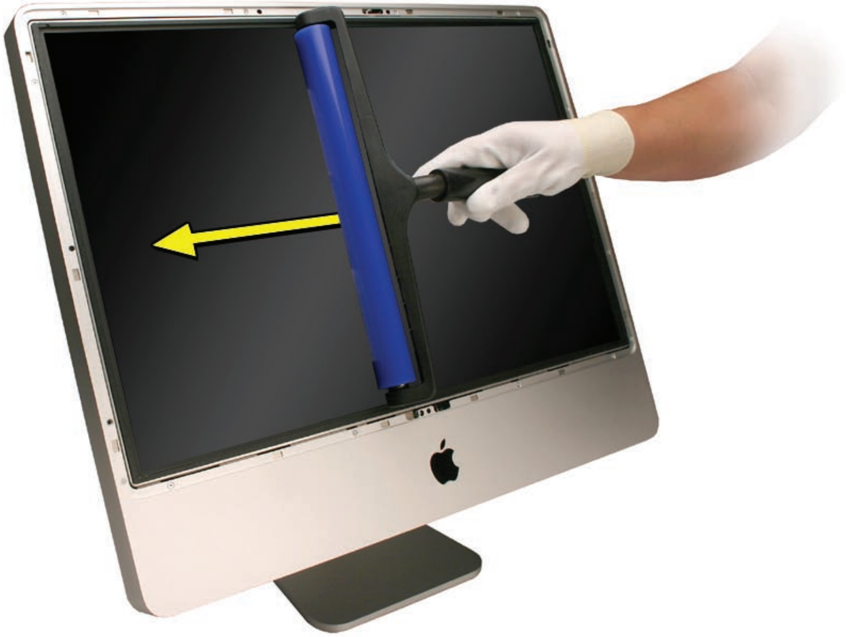
Click on photo--->>

14. Once the glass has been cleaned and polished, visually inspect the glass for any remaining dust, fingerprints, or a hazy residue. If there are contaminates trapped between the LCD panel and the glass panel repeat the cleaning procedure described in this section before returning the system to the customer.
15. Replace the memory access door.

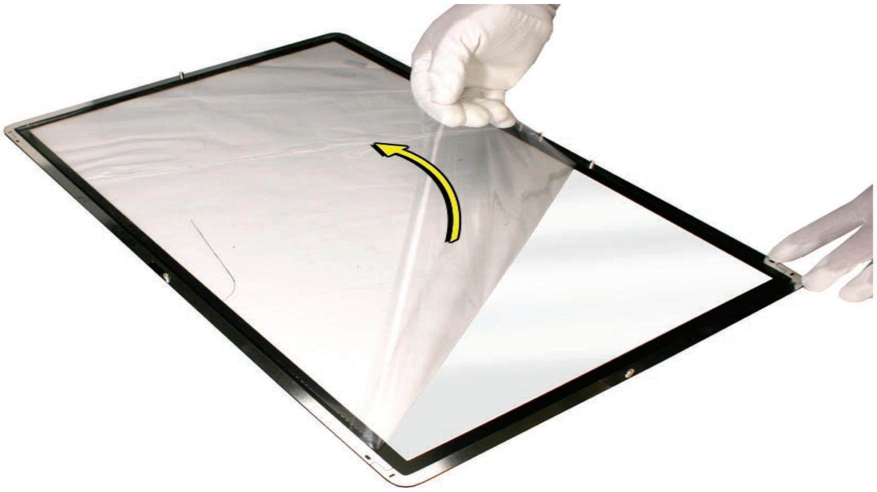
Installing a Replacement Glass Panel

1. Stand the computer upright. **Note**: Fewer dust particles will settle on the LCD panel with the computer in the vertical position.
2. Roll the sticky silicon roller over the LCD panel to remove any particles.

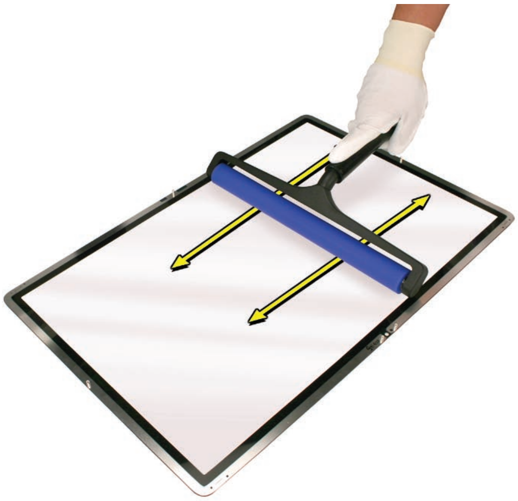
Click on photo--->>



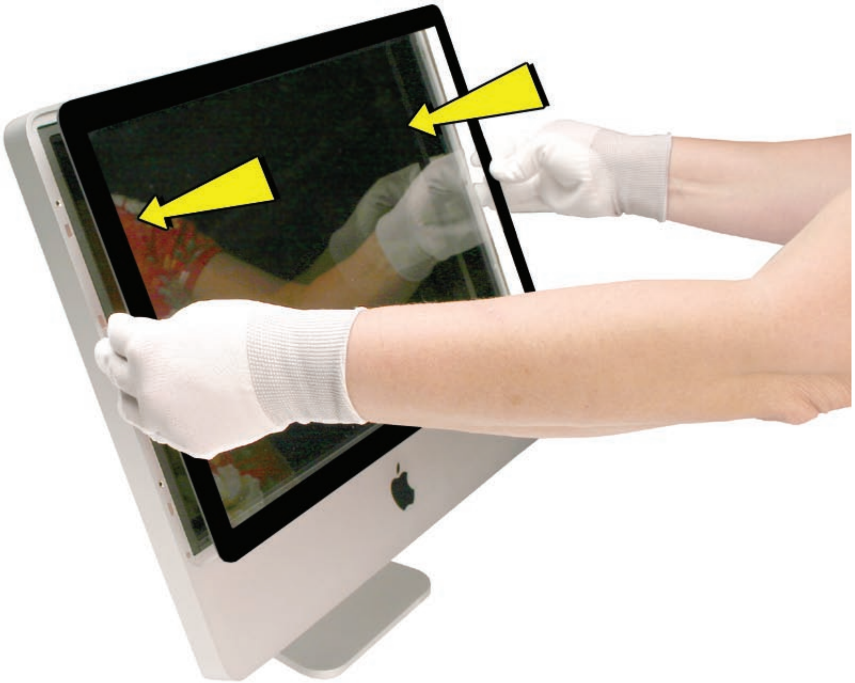
3. Remove the new glass panel from the service packaging. **Note:** The new panels have a removable film protecting the glass on both sides.
4. Place the glass on a clean microfoam bag with the inside of the glass facing up (the side with metal pins.) Wearing gloves, carefully remove the protective film from the inside surface of the glass.



5. Clean the INSIDE surface of the glass panel with the silicon roller. Gently roll the clean silicon roller over the inside surface of the glass. **Note**: **The glass panel is delicate and will break if too much pressure is applied.**



6. Holding the glass by the edges, carefully line up the metal pins on the inside of the glass panel with the holes at the top of the front bezel and the hole at the bottom of the bezel. Gently lower the glass panel onto the bezel. The magnets on the front bezel will pull and hold the glass panel in place.



7. Peel the protective film from the outside surface of the glass panel. If the glass panel pulls away from the front bezel, gently hold it in place while removing the protective film.
8. Clean the outside of the glass panel with a clean microfiber cleaning cloth. If necessary, spray a small amount (two pumps) of iKlear polish on the outside of the glass panel. Wipe the glass until the solution completely disappears and there is no longer any residue or haze.

Click on photo--->>

9. Once the glass has been cleaned and polished, visually inspect the glass for any remaining dust, fingerprints, or a hazy residue. If there are contaminates trapped between the LCD panel and the glass panel repeat the cleaning procedure described in this section before returning the system to the customer.
10. Replace the memory access door.

Cleaning Tool Resources

1. Apple Retail Stores
    - MCM Portal (http://www.mcmb2b.com/appleasp)
    - iKlear distributors: (http://www/klearscreen.com/iKlear.aspx)
    - iKlear International dealer listing**:** http://meridrew.com/international.html
    - iKlear US/Canada dealer listing: http://meridrew.com/search/search.php
2. Japan: Pleiades Digital Communications, Inc.www.pleiadesdesigns.co.jp
3. Brillianize is an alternative cleaning solution http://www.brillianize.com/
    - Brillianize products are listed here: http://www.brillianize.com/products2.html
    - Brillianize dealer locator: http://www.brillianize.com/brillianize_dealer_locator.htm
4. Cleaning Cloth
    - The micro fiber "terry" style cleaning cloth can be purchased directly from iKlear or Brillianze

Ultra Violet Inspection Lamp

An optional tool used to detect dust and contamination is the ultra violet inspection light. The Bayco UV Inspection Lamp, 13 watt twin tube plug-in model shown below is one example of a low-cost model that works well. In the US service providers can order the lamp at: http://www.amazon.com Other sources can be found using Google.

The UV inspection lamp can be used to highlight contaminates that may not be easily viewed under normal lighting conditions. Dim or turn off the normal task lighting and turn on the UV inspection lamp. Pass the UV inspection lamp over the glass panel and note any dust particles or contaminates that would be objectionable to the customer. Wipe the microfiber cloth over the area where the contaminates have been observed to determine whether they are on the outside or inside surface of the glass.

Front Bezel

Tools

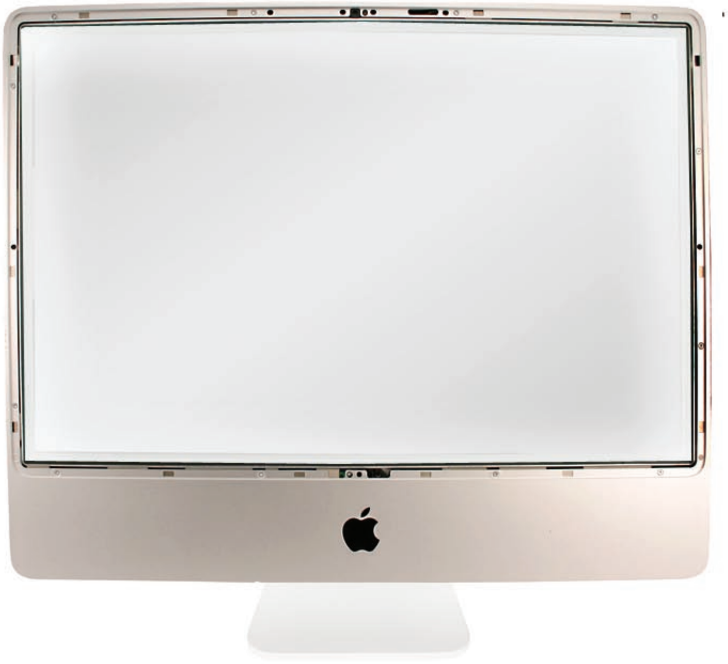
This procedure requires the following tools:

- Torx T8 screwdriver
- Soft, clean towel or cloth

Preliminary Steps

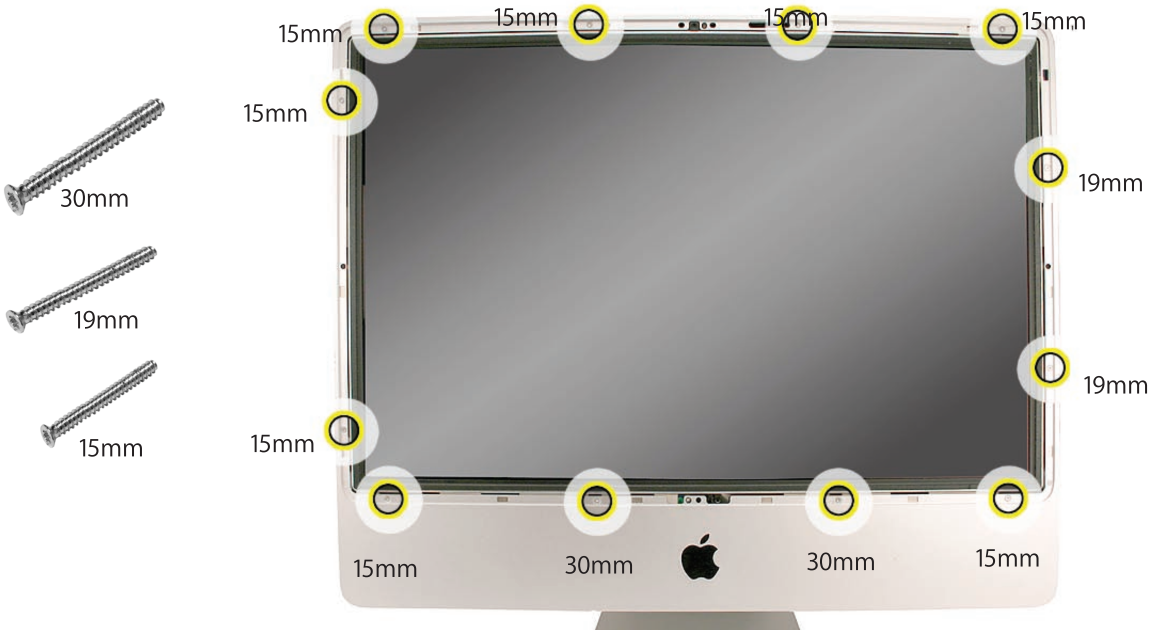
Before you begin, remove the [access door](#) and [glass panel.](#)

Part Location

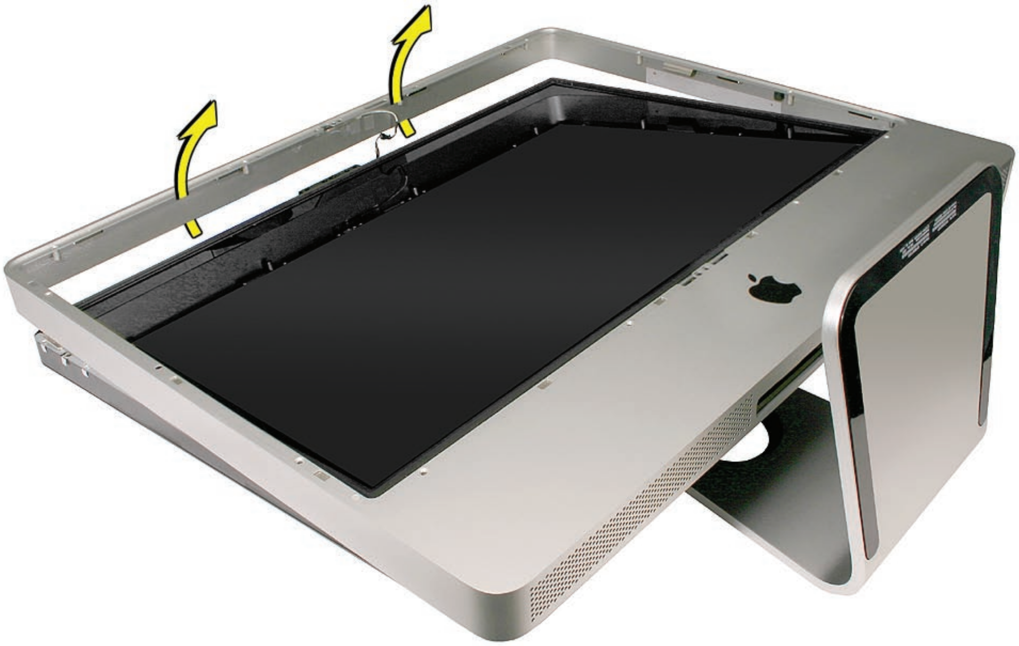


Removing the Front Bezel

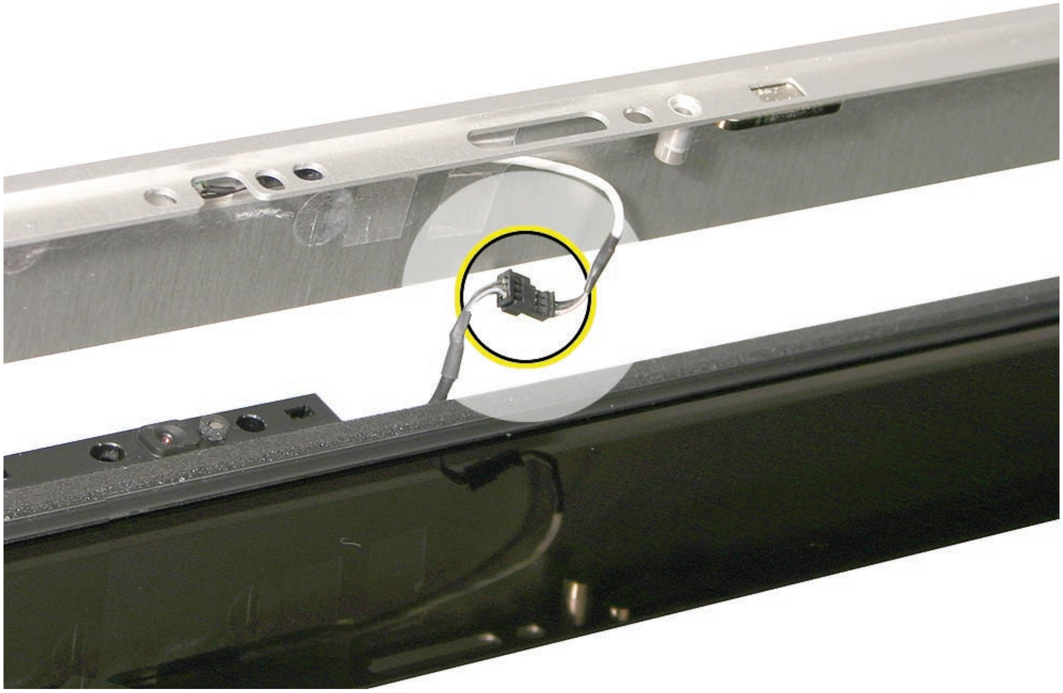
1. Place the computer on a soft protective lint-free surface such as a very clean ESD mat to avoid damaging the finish on the stand or rear housing.
2. Position the computer on the rear cover with the stand facing you.
3. Remove the twelve screws around the bezel. **Replacement Note**: The two longer screws (30mm) attach to the bezel along the bottom of the panel, on the right and left side of the Apple logo. The two medium length screws (19mm) attach above and below the optical drive on the right side, and the six shorter screws (15mm) attach around the top, left side, and bottom.


15mm
15mm
15mm
15mm
15mm
30mm
19mm
19mm
19mm
15mm
15mm
15mm
30mm
30mm
15mm

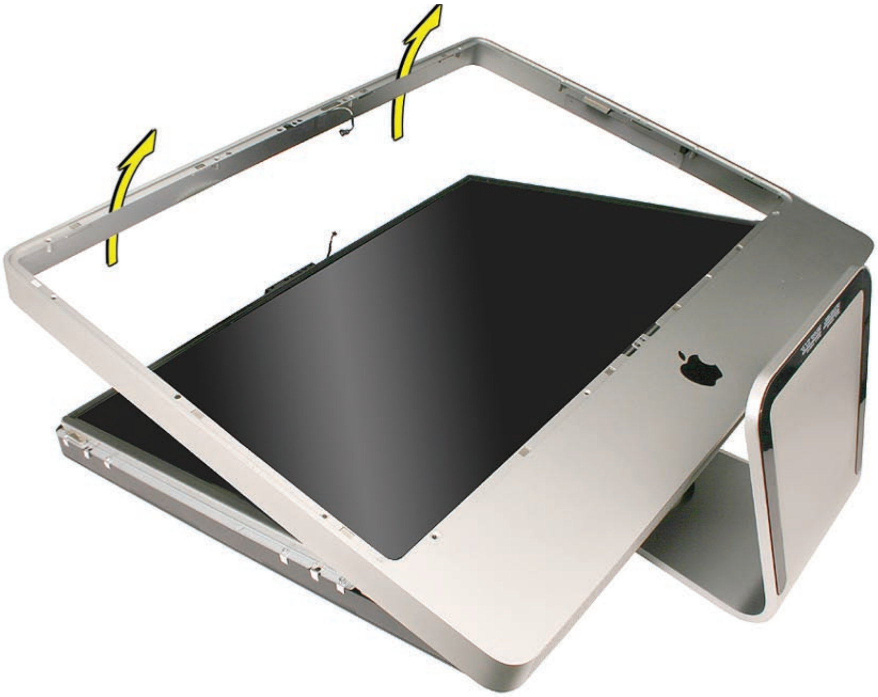
4. With the upper corners loosened, lift up—but do not remove—the bezel.



5. Notice the connected microphone cable at the top of the bezel. Without straining the cable, hold the bezel up, and disconnect the microphone cable from the cable extension.

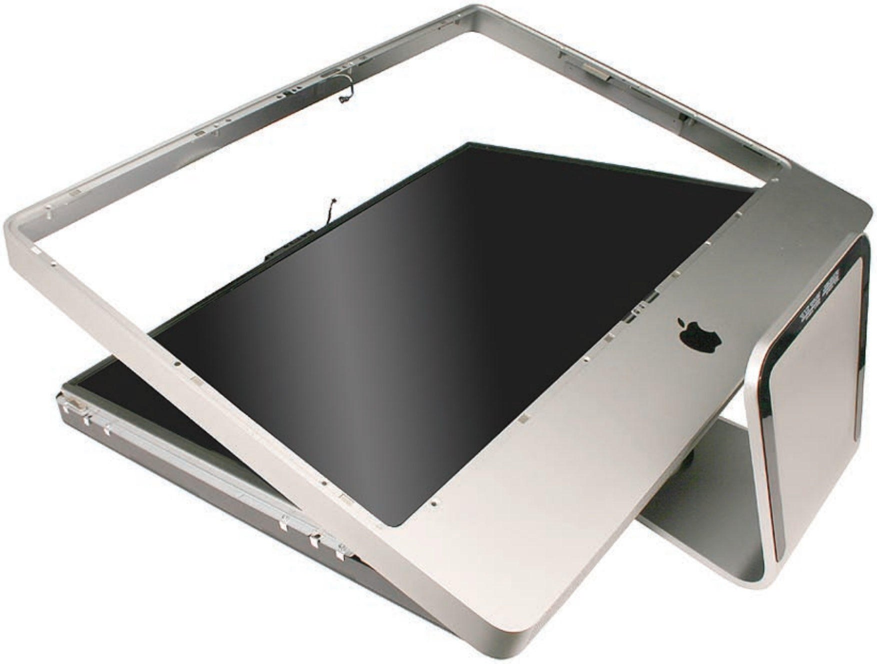


6. Continue lifting the front bezel toward you and off the rear housing.

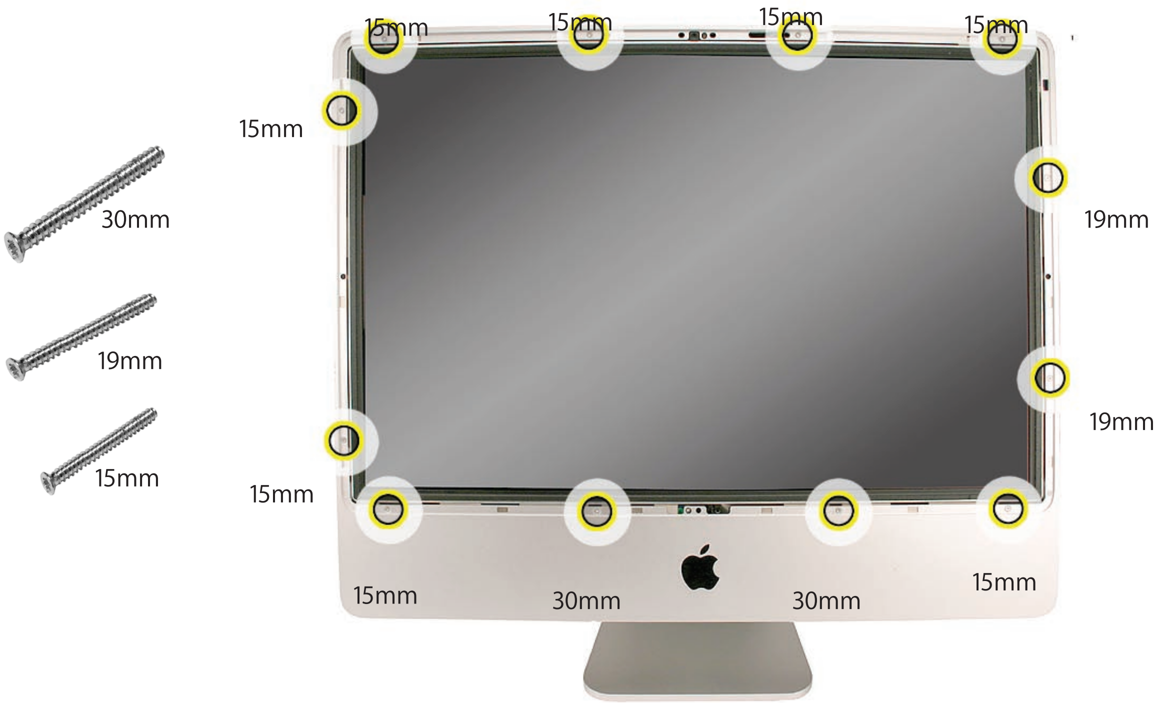


Replacing the Front Bezel

1. Place the computer on a soft protective lint-free surface such as a very clean ESD mat to avoid damaging the finish on the stand or rear housing.
2. Position the computer on the rear cover with the stand facing you.
3. Position the bottom of the front bezel over the bottom edge of the rear cover.
4. Lower the front bezel, connect the microphone cable to the extension cable and tuck the cable into the computer housing. Carefully lower the bezel onto the computer, and make sure the cable cannot be pinched.



5. Replace the twelve screws around the bezel. The two longer screws (30mm) attach to the bezel along the bottom of the panel, on the right and left side of the Apple logo. The two medium length screws (19mm) attach above and below the optical drive on the right side, and the six shorter screws (15mm) attach around the top, left side, and bottom.


15mm
15mm
15mm
15mm
15mm
30mm
19mm
19mm
15mm
19mm
15mm
15mm
30mm
30mm
15mm

6. **[Clean and replace the glass panel.](#)** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.

7. **[Replace the access door.](#)**

Camera Board

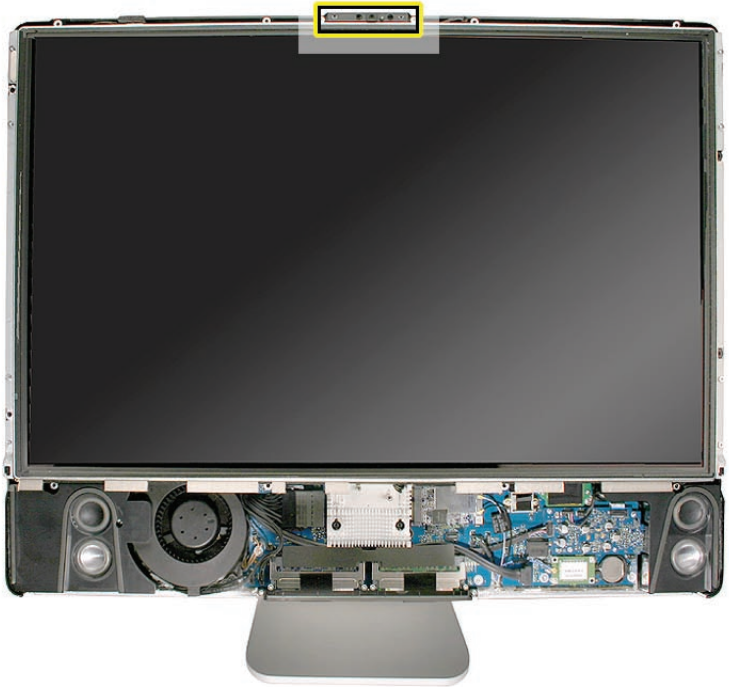
Tools

- Torx T8 screwdriver
- ESD mat, soft , clean towel or cloth

Preliminary Steps

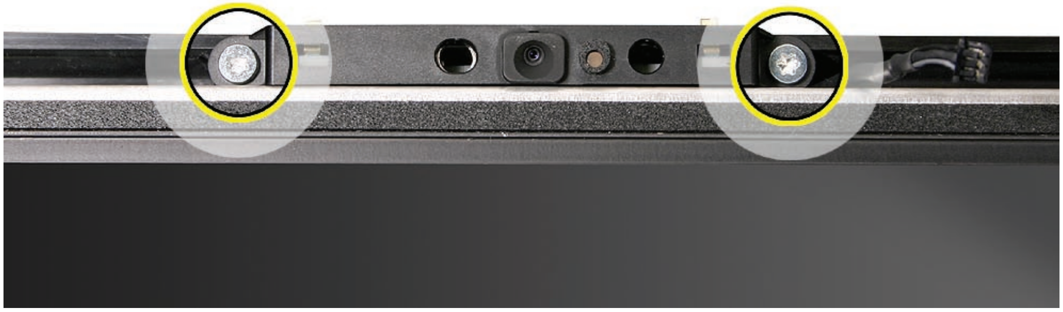
Before you begin, remove the **access door** , **glass panel,** and **front bezel.**

Part Location

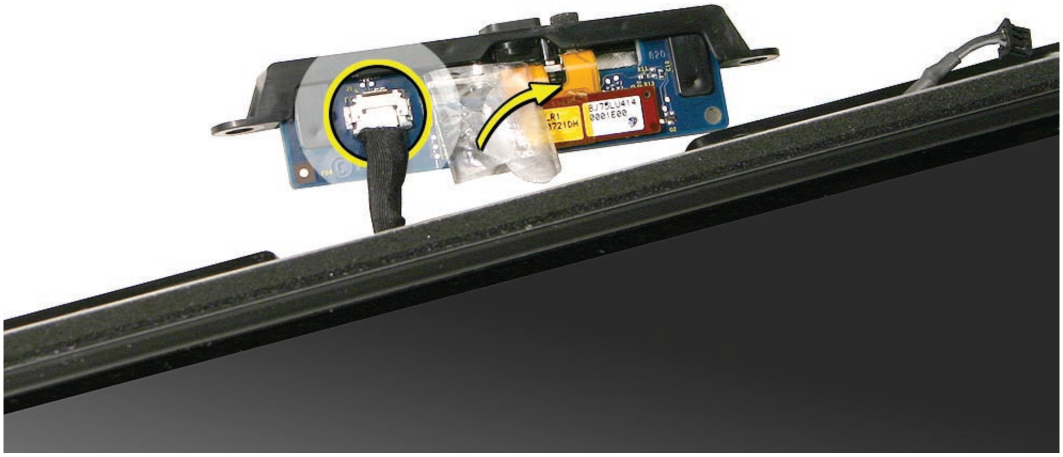


Removing the Camera Board

1. The camera board bracket and cable are visible after you remove the front bezel off the computer.
2. Remove two T8 screws on the camera bracket.

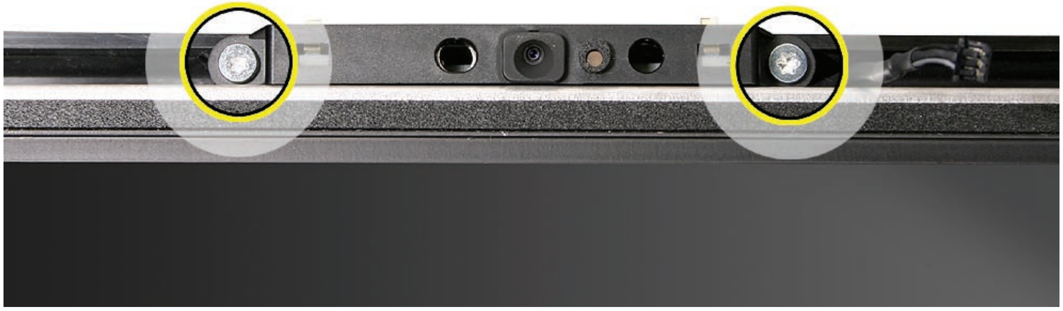


3. Lift the camera bracket out of the rear housing enough to access the Kapton tape securing the camera cable.
4. Unwrap the Kapton tape covering the camera cable and connector. Disconnect the camera cable from the camera board. Set the camera board and attached bracket aside.



Replacing the Camera Board

1. Connect the camera cable to the camera board. Reapply the kapton tape over the cable and connector.
2. Lower the camera bracket onto the black posts on the rear cover.
3. Replace the two T8 screws.



4. Replace the front bezel.
5. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
6. Replace the access door.

Battery

Tools

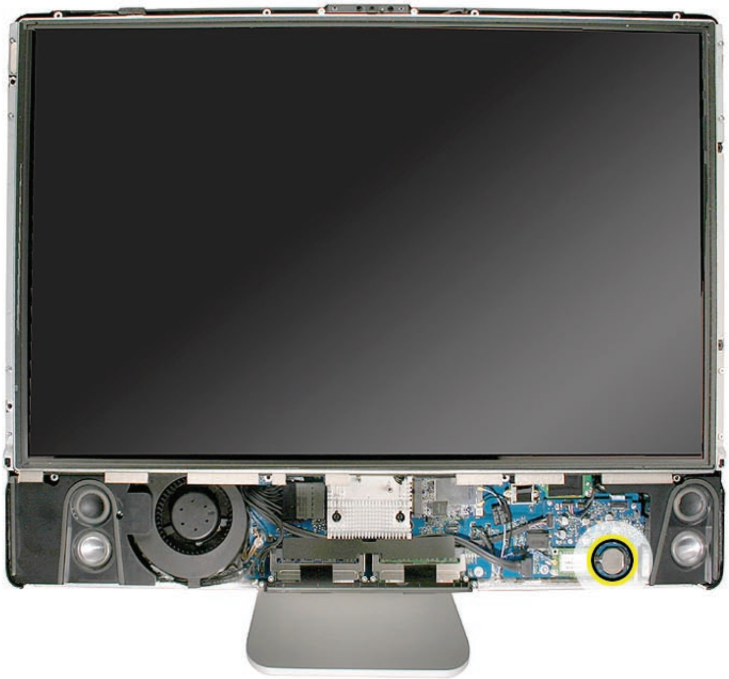
The only tool required for this procedure is a black stick (or other nonconductive plastic or nylon tool).

Preliminary Steps

Before you begin, remove the following:

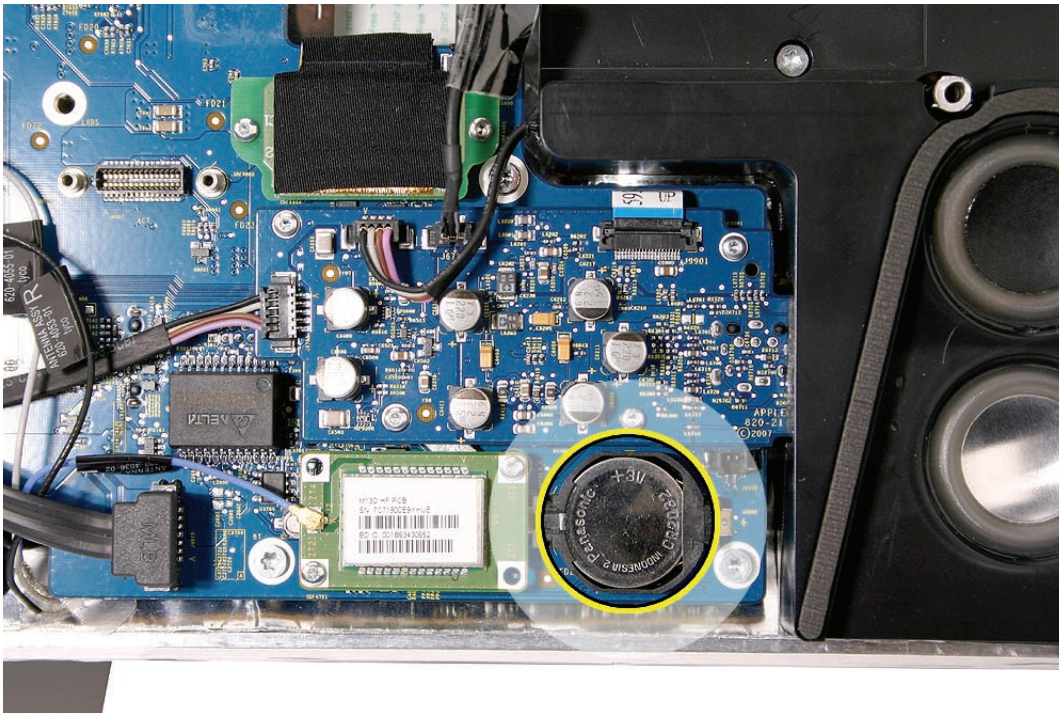
- Access door
- Glass panel
- Front bezel

Part Location

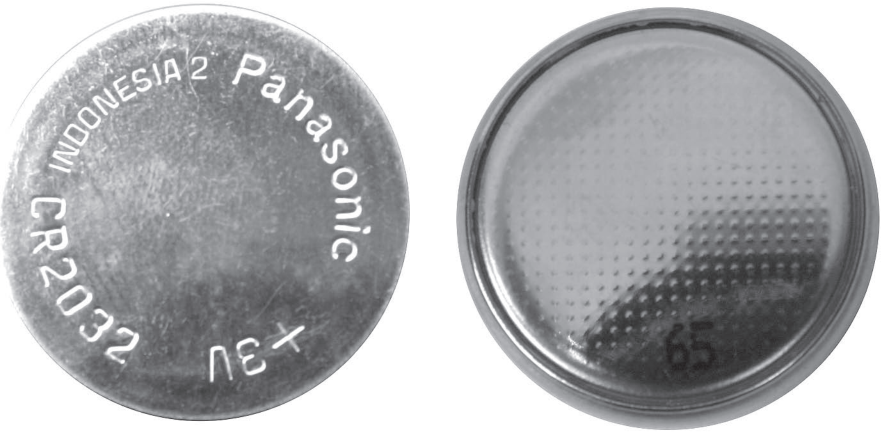


Removing the Battery

1. Use a black stick to pry out the battery from the battery socket on the logic board.



2. Before installing the battery, make sure the side with the engraved markings (+ side) is up .


INDONESIA 2
Panasonic
CR2032
+3V
65

Replacing the Battery

1. Make sure the battery socket is open and free of dust.
2. Press the battery into the socket. Make sure the side with the engraved markings (+ side) is facing up.
3. Replace the front bezel.
4. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
5. Replace the access door.

IR (Infrared) Board

Tools

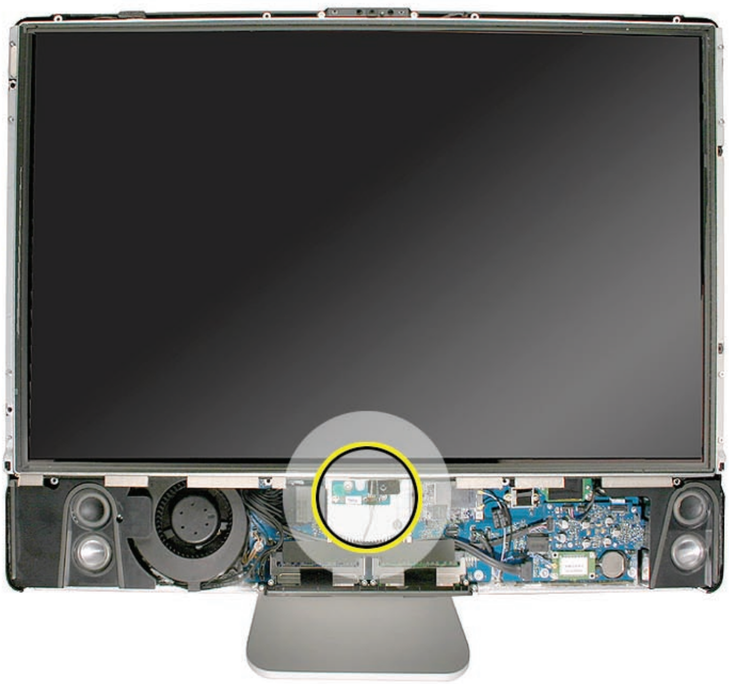
The only tool required for this procedure is a Torx T6 screwdriver.

Preliminary Steps

Before you begin, remove the following:

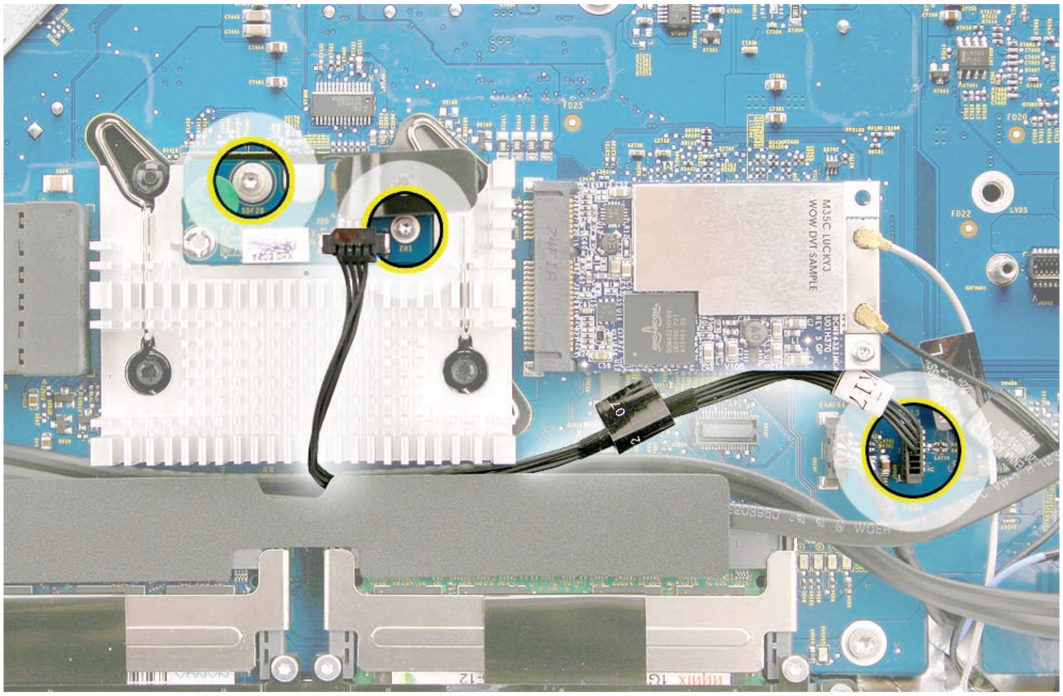
- Access door
- Glass panel
- Front bezel

Part Location



Removing the IR Board

1. **Note**: Small differences in appearance between the images pictured and the actual computer you are servicing may exist, however the steps and sequences are the same unless otherwise mentioned.
2. Remove the two T6 screws from IR board and disconnect the IR cable from the logic board.



3. Lift the IR board from the heatsink.

Replacing the IR Board

1. If removed, connect the IR cable to the IR board.
2. Install the IR board and T6 screws.
3. Connect the IR cable to the logic board.
4. Replace the front bezel.
5. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
6. Replace the access door.

AirPort Extreme Card

Tools

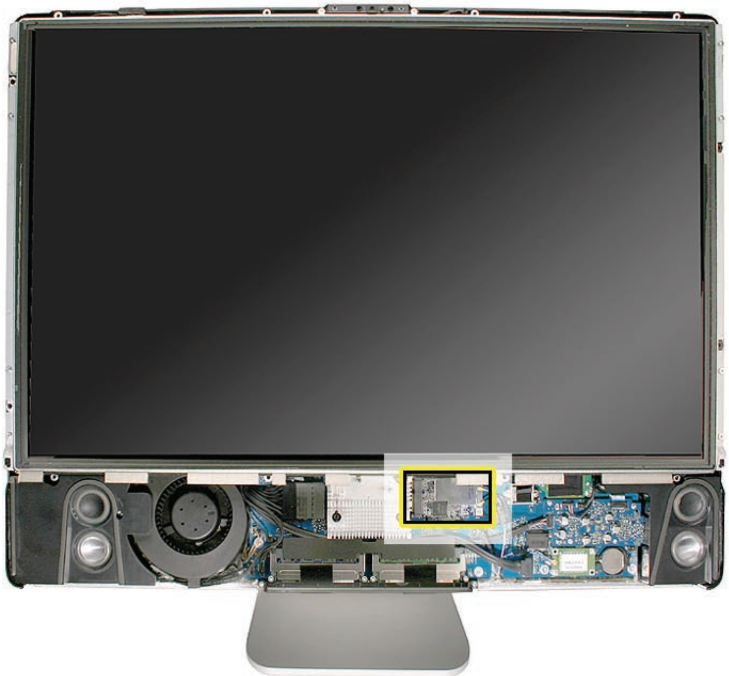
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass Panel
- Front bezel

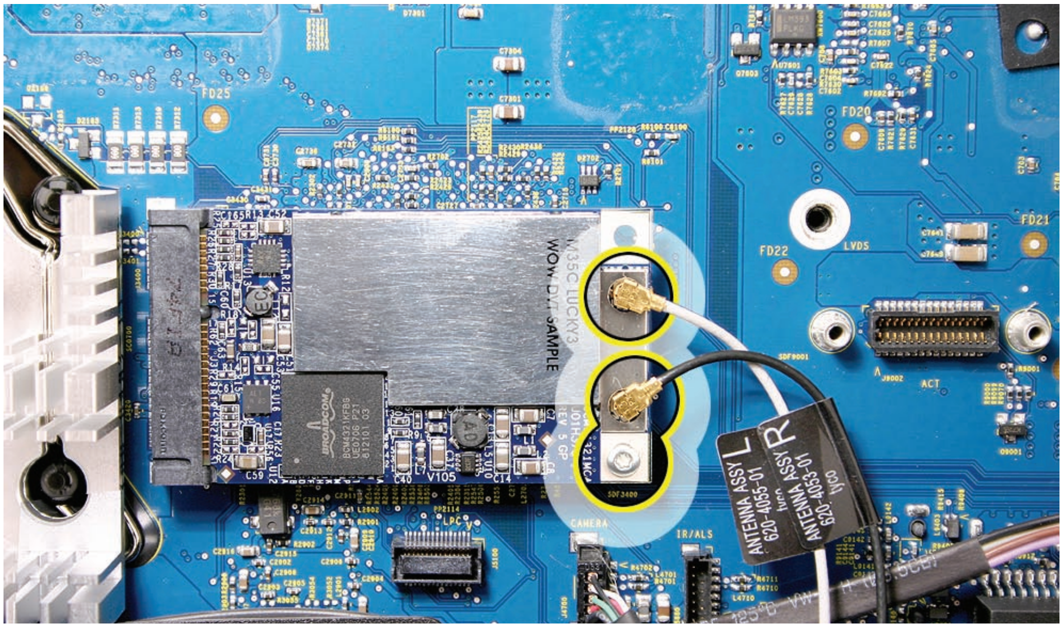
Part Location



Removing the AirPort Extreme Card

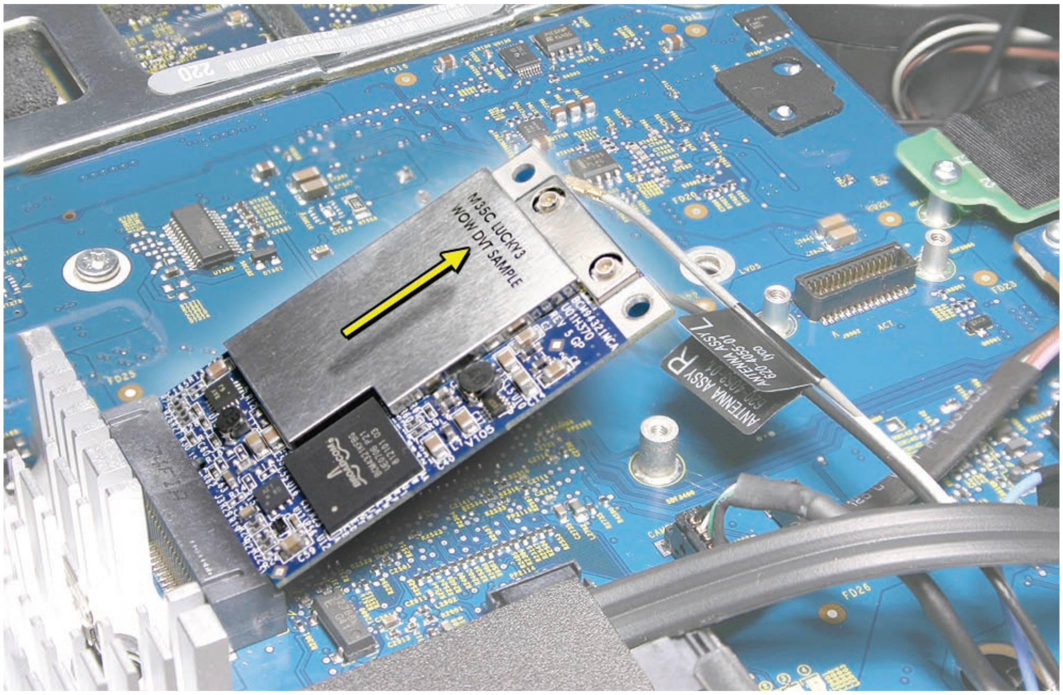
1. Using a T6 torx screwdriver, remove the one 5-mm long screw and disconnect the two antenna cables from the AirPort Extreme card. **Note**: The antenna cables and connectors are very delicate and should be carefully removed by pulling on the antenna cable connectors, not on the cables.

922-7010



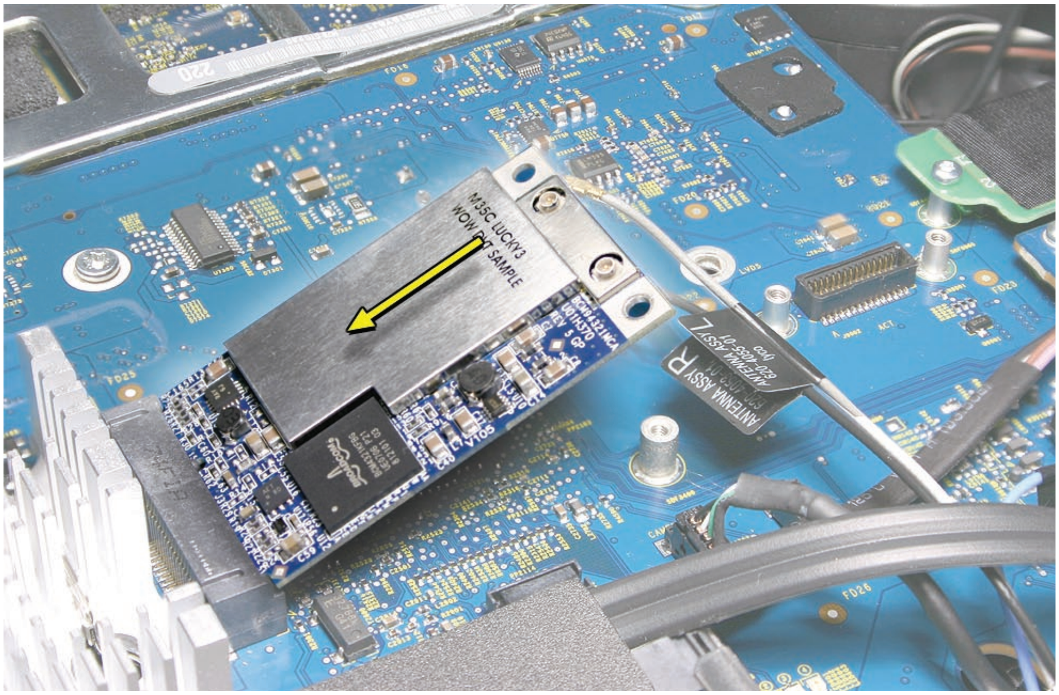
1.

2. Holding the card by the edges, pull the AirPort Extreme card out of the slot.

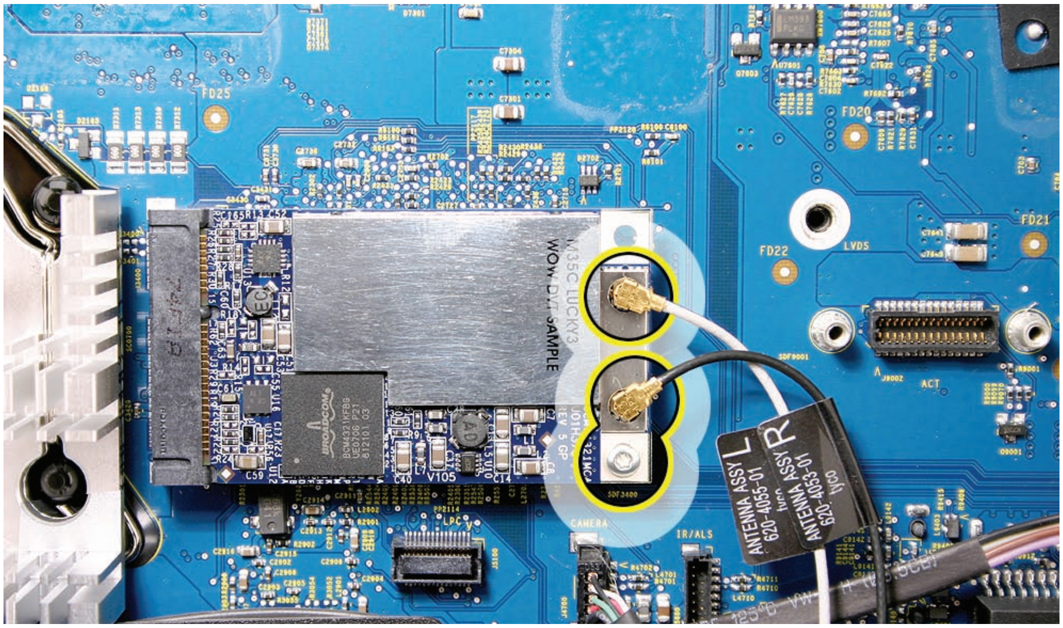


Replacing the AirPort Extreme Card

1. Align the AirPort Extreme card with the slot on the logic board. Insert the board into the slot.



2. Connect the antenna cables to the connectors on the AirPort Extreme card.
   Note: The antenna cables might include an "L" or "R" tab near the connector end; however, you can disregard that because the cable position can be swapped without any change in performance. Replace the T6 screw.



3. **Replace the front bezel.**
4. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
5. **Replace the access door.**

Bluetooth Card

Tools

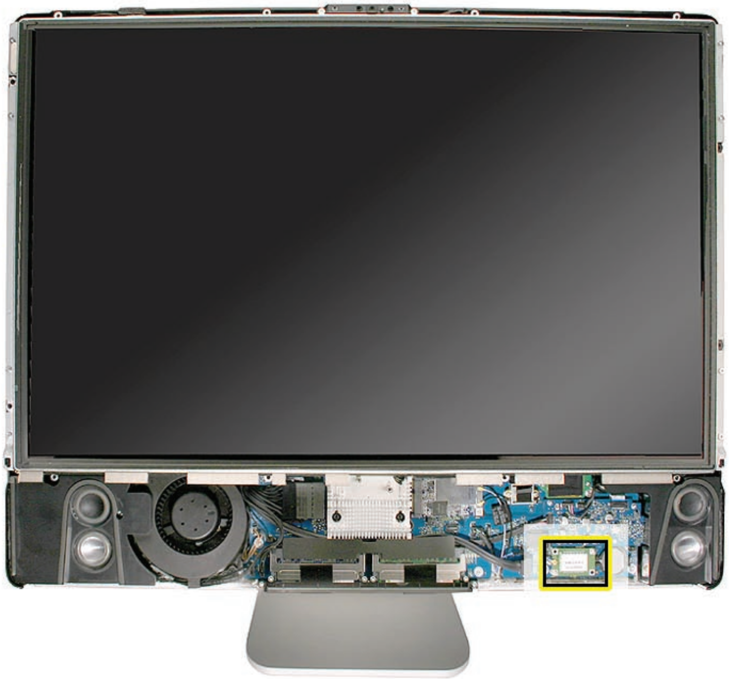
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel

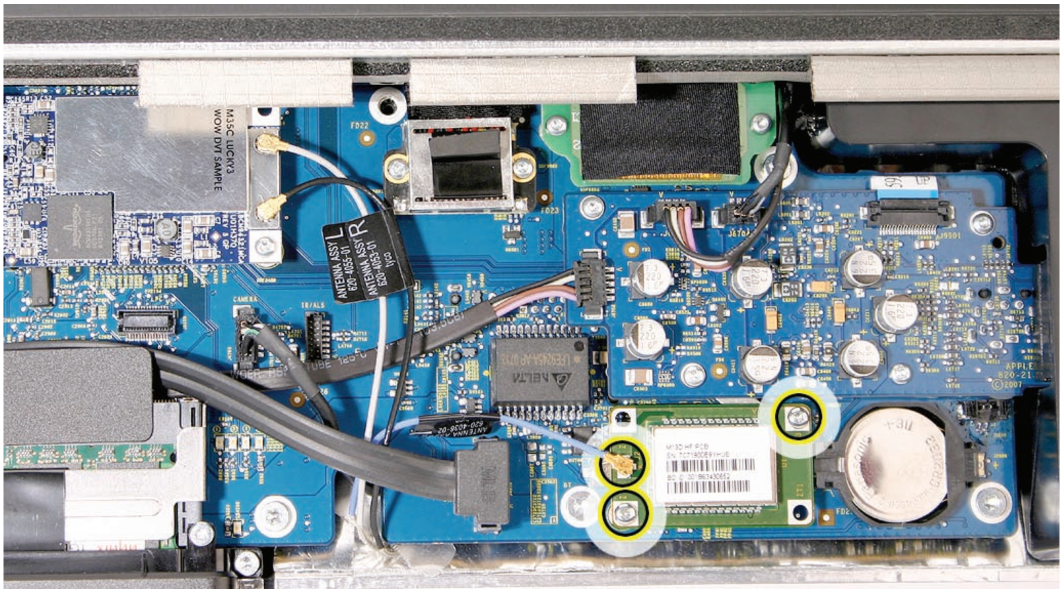
Part Location



Removing the Bluetooth Card

1. Using a T6 torx screwdriver, remove the two 5-mm long screws from the lower left and upper right opposite corners of the Bluetooth card.
2. Disconnect the Bluetooth antenna from the left side of the card. **Note**: The antenna cable and connector are very delicate and should be carefully removed by pulling on the antenna cable connector, not on the cable.

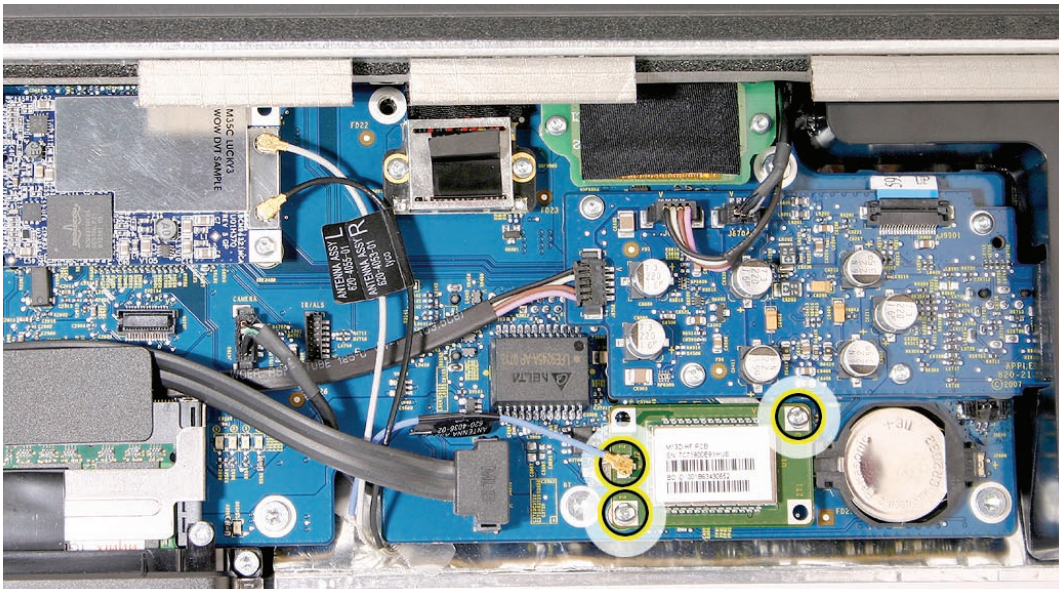
922-7010



Replacing the Bluetooth Card

1. Press the Bluetooth card onto the logic board connector.
2. Connect the Bluetooth antenna to the Bluetooth card.
3. Replace the two T6 Bluetooth card screws.

922-7010



4. Replace the front bezel.
5. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
6. Replace the access door.

LCD Display Panel

Tools

- Torx T6 screwdriver
- Torx T8 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel

Important: To prevent the buildup of static charges which may attract dust particles to the surface of the display, store the LCD panel in an anti-static bag whenever it has been removed from the system.

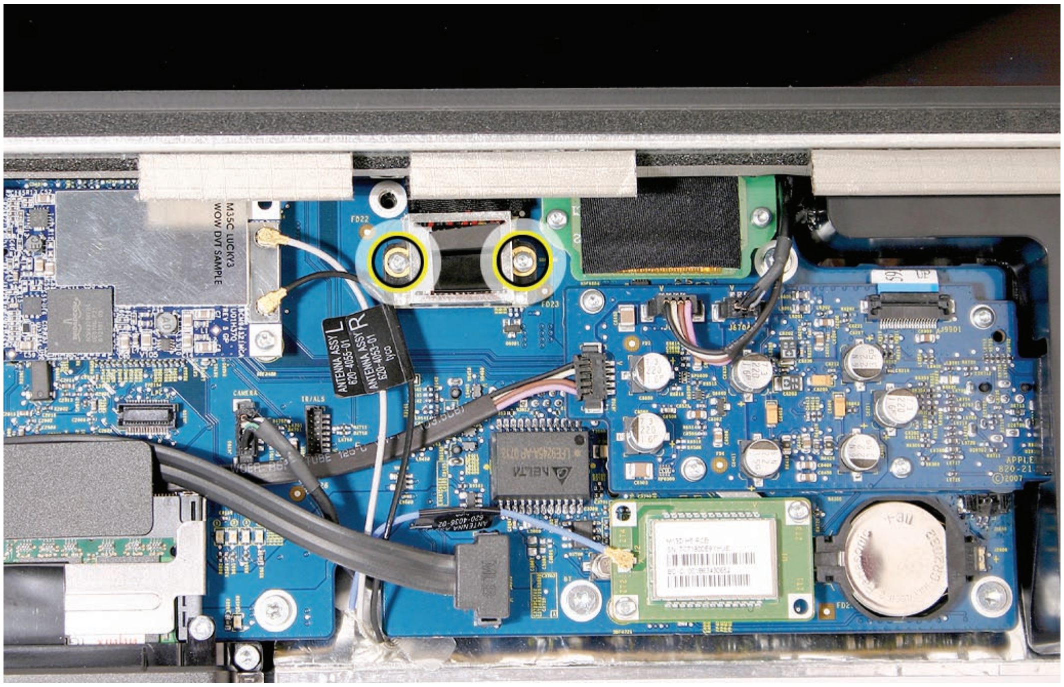
Part Location

Removing the Display Panel

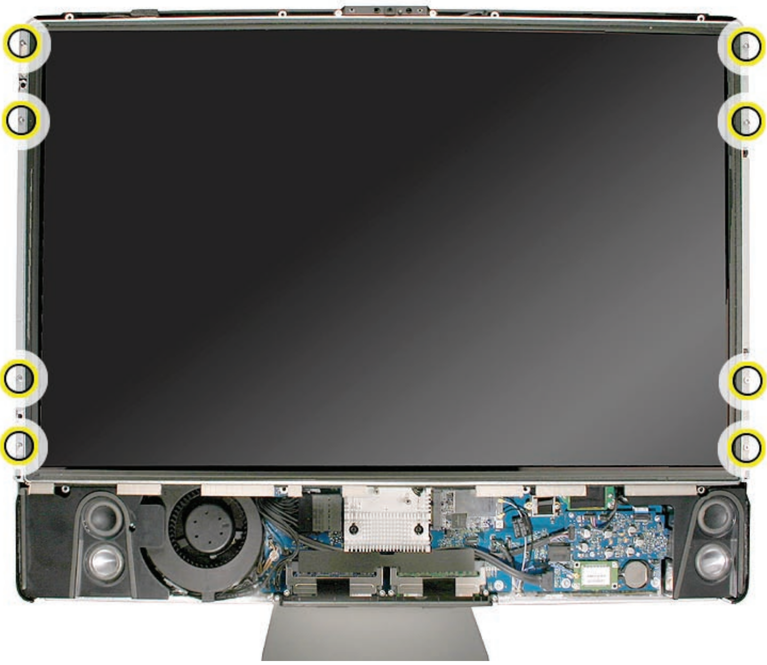
1. Place the computer with the display face up.

2. Remove the two T6 screws from the LVDS connector. Pull the black tab on the LVDS cable to disconnect it from the logic board.

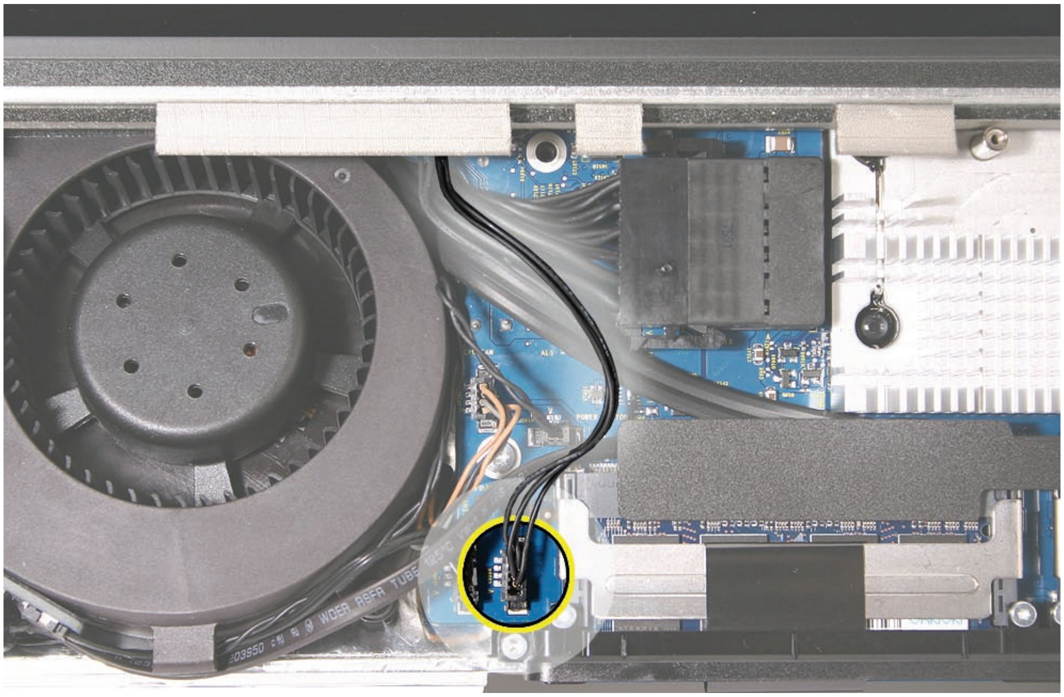
922-7010



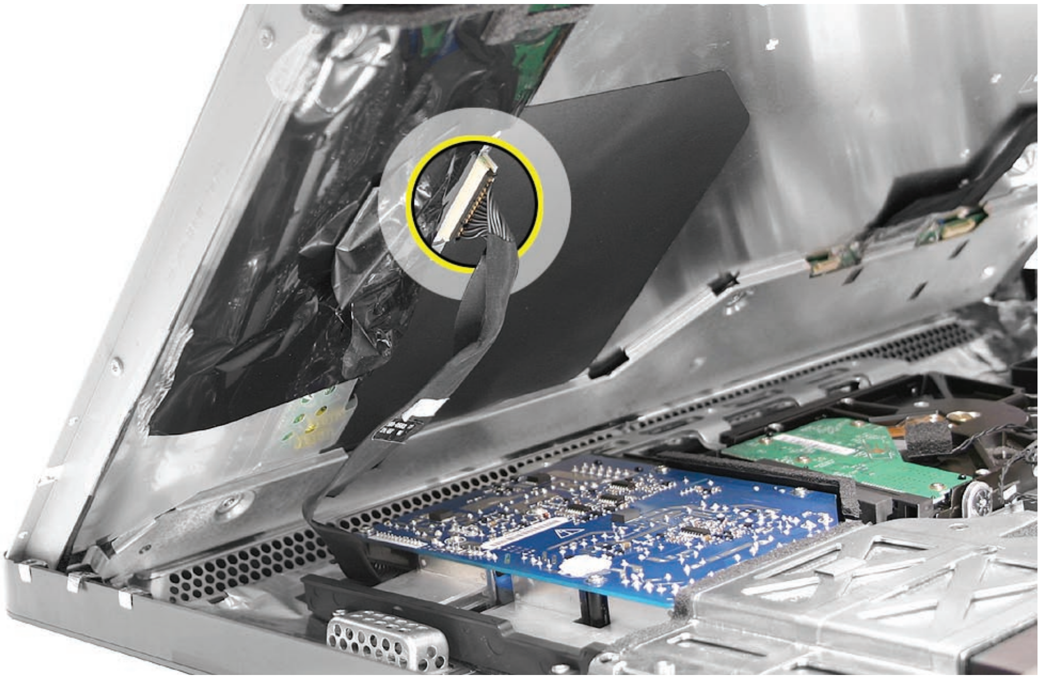
3. Remove the eight 8-mm long T8 screws from the sides of the panel frame.



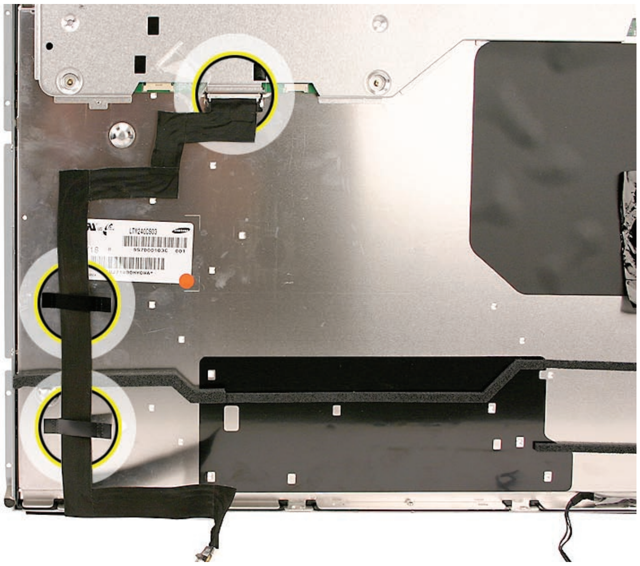
4. Disconnect the display sensor cable from the left side of the logic board.



5. Grasp the LCD panel at the bottom edge, and tilt up the panel. Peel back the black tape covering the inverter cable connector on the back of the LCD panel. Pull the connector straight out, toward the power supply. If you are replacing the cable, disconnect the other end from the power supply. Lift the LCD panel off the rear housing.

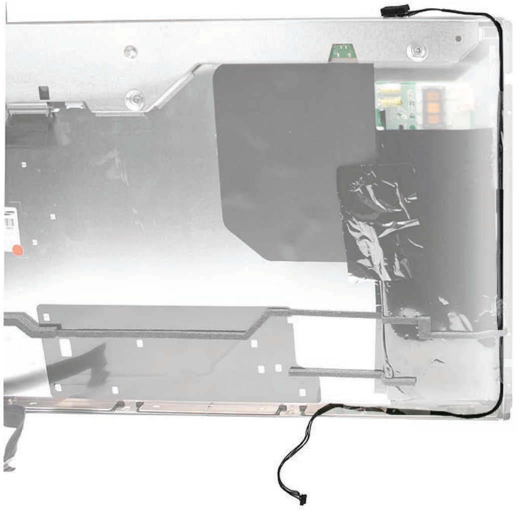


6. Disconnect the LVDS cable LVDS cable from the panel



7. On the right side of the panel is the display temp sensor (under the foam at the top) and the display temp sensor cable. These are included with the LCD panel, but they are also offered separately as service parts.

Important: To prevent the buildup of static charges which may attract dust particles to the surface of the display, store the LCD panel in an anti-static bag whenever it has been removed from the system.

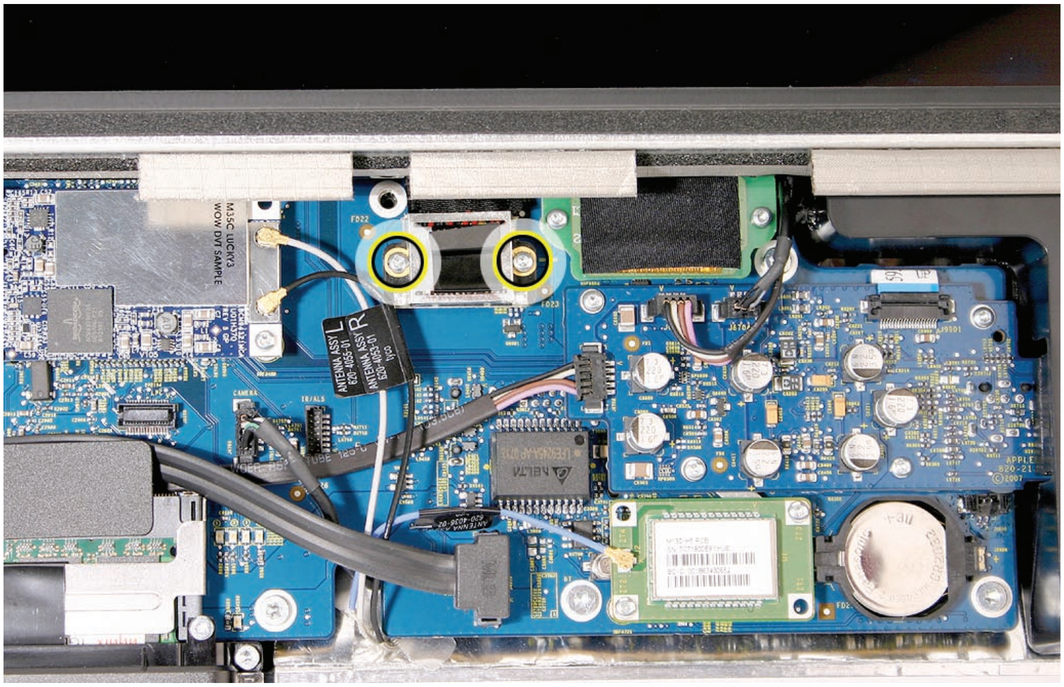


8. **Replacement Note**: If replacing the display panel, disconnect the LVDS cable from the panel and the inverter cable from the inverter board before returning the module to Apple. Transfer the two cables to the replacement panel. A replacement panel includes the inverter board, display panel mounting brackets, the foam strips and gaskets, the display temp sensor, and the display temp sensor cable.

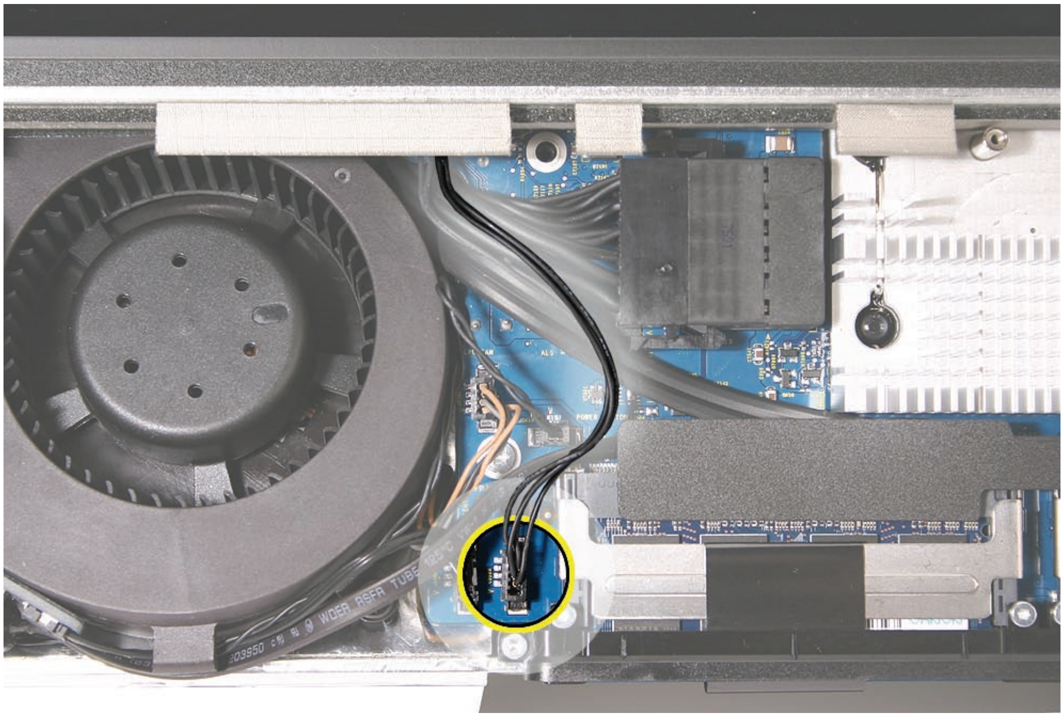
Replacing the Display Panel

1. Connect the LVDS cable to the rear of the display panel.
2. Connect the inverter cable to the inverter board on the rear of the display panel. Replace the black mylar tape over the inverter cable connector.
3. Make sure the other end of the inverter cable is connected to the power supply.
4. Make sure the display temp sensor and the temp sensor cable are connected at the top of the display panel and that the foam is covering the sensor.
5. Lower the LCD panel into the computer assembly.
6. Connect the LVDS cable to the logic board. Replace the two T6 screws.

922-7010

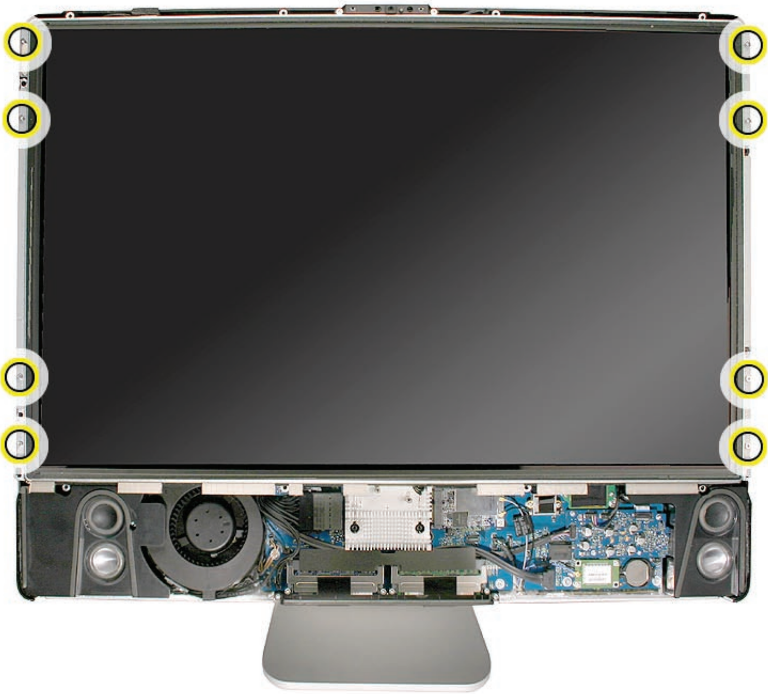


7. Connect the display temp sensor cable to the left side of the logic board.



8. Install the eight mounting screws.

922-7815



9. **Replace the front bezel.**
10. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
11. **Replace the access door.**

Speaker, Left

Tools

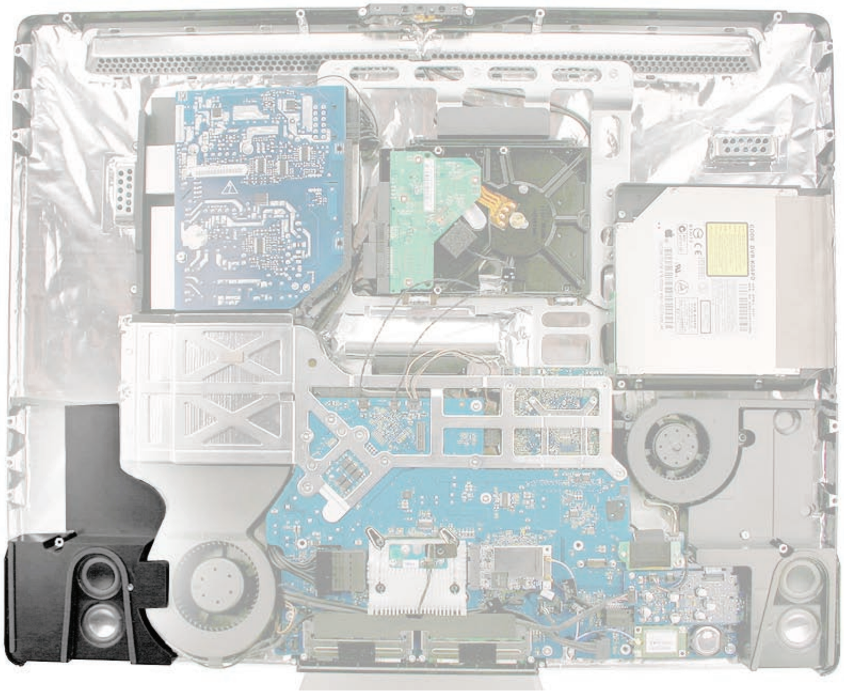
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

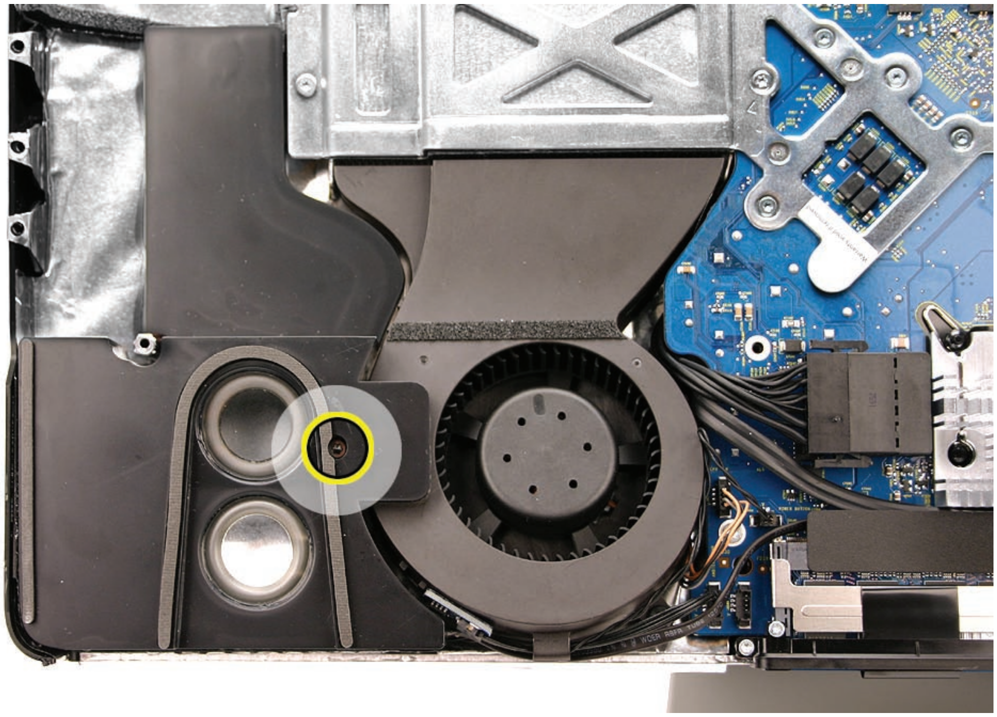
- Access door
- Glass panel
- Front bezel
- LCD Panel

Part Location

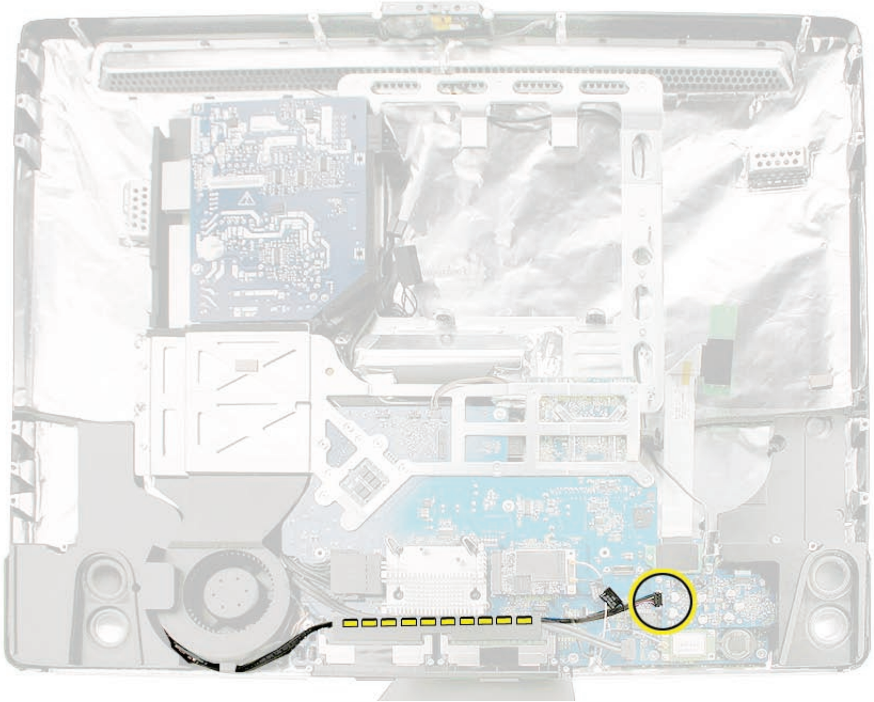


Removing the Left Speaker

1. Using a T8 torx screwdriver, remove the long screw from the left speaker.



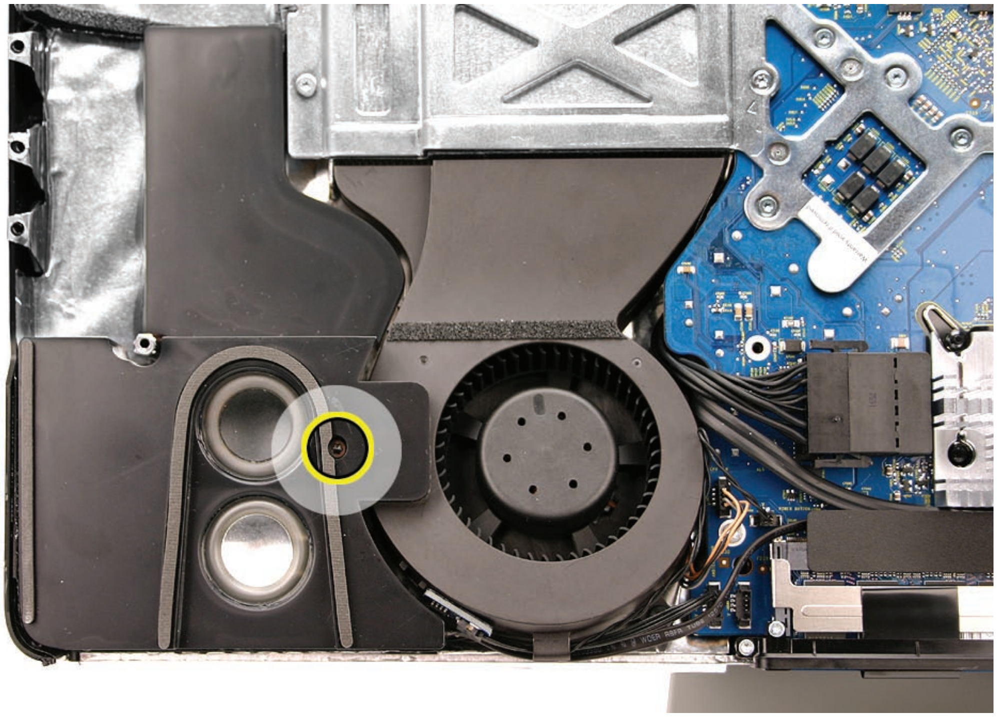
2. Disconnect the speaker from the audio board. The speaker cable runs under the black plastic cable guide (above the memory slot) and connects to the audio board on the right side of the logic board.



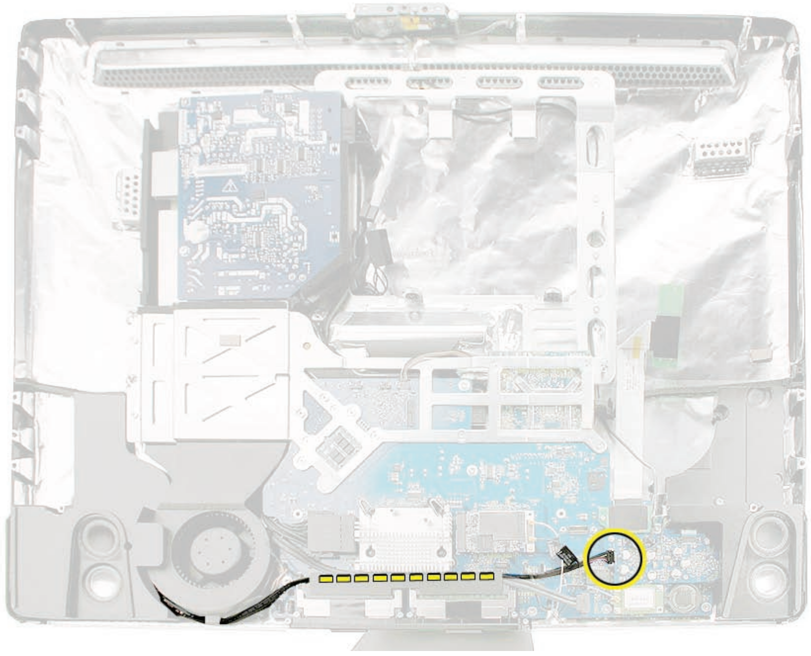
3. Lift the speaker out of the rear housing.

Replacing the Left Speaker

1. Install the speaker in the rear housing. Secure the left speaker with the longer mounting screws.



2. Route the speaker cable under the cable clip on the CPU fan and under the long cable guide above the memory slots. Connect the speaker cable to the audio board on the right side.



3. Replace the display panel.
4. Replace the front bezel.
5. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
6. Replace the access door.

Ambient Temperature Sensor Cable

Tools

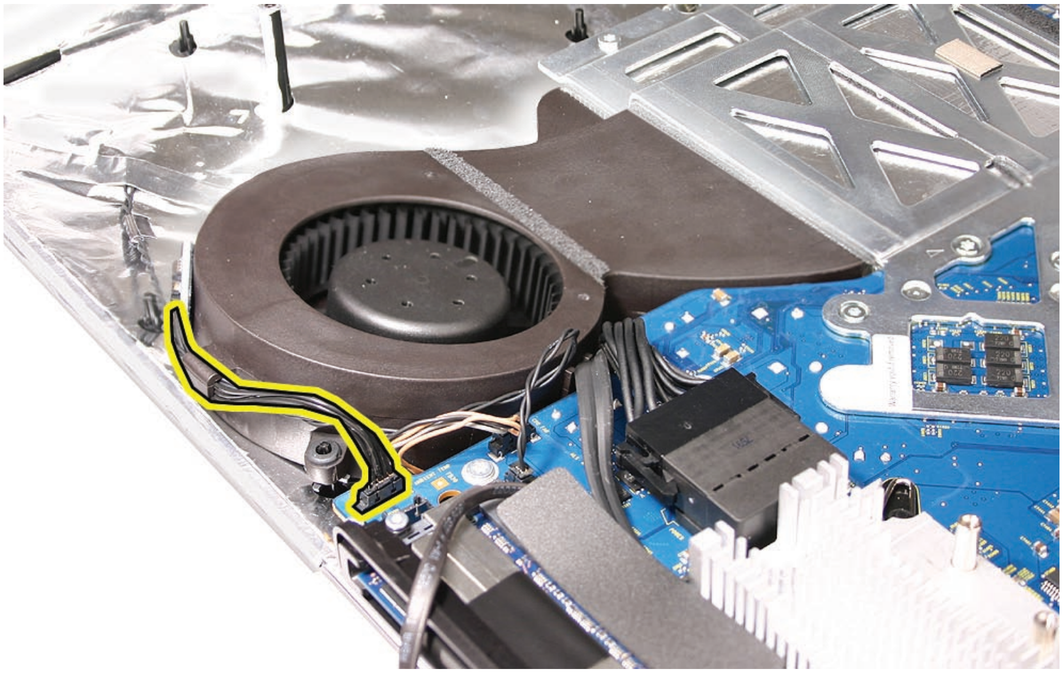
No tools are required for this procedure.

Preliminary Steps

Before you begin, remove the following:

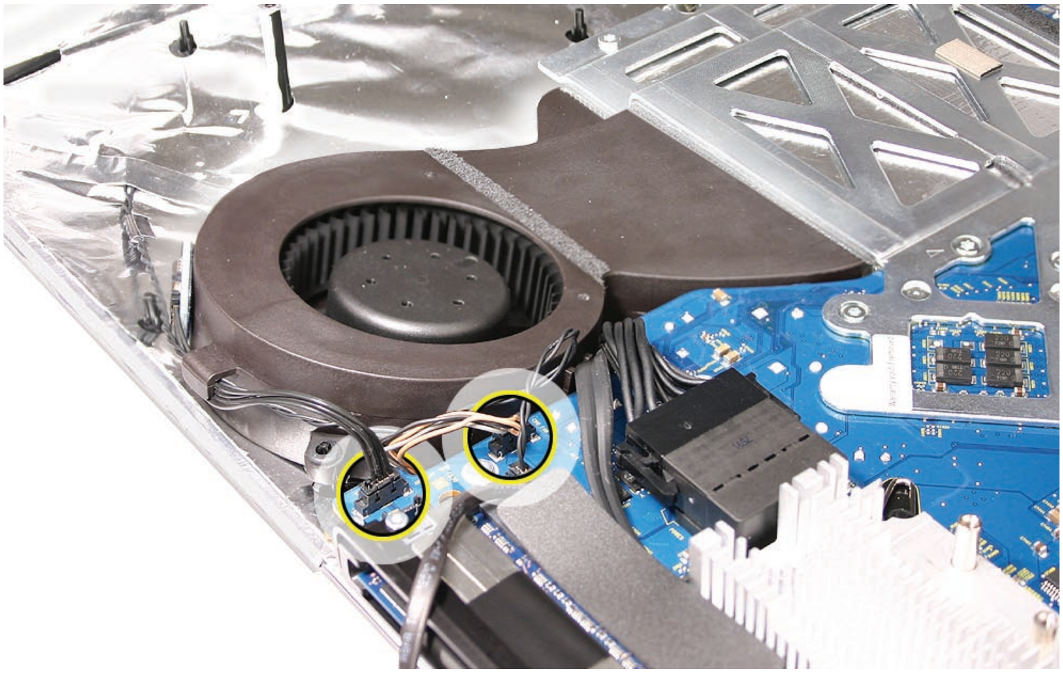
- Access door
- Glass panel
- Front Bezel
- LCD display
- Speaker, Left

Part Location

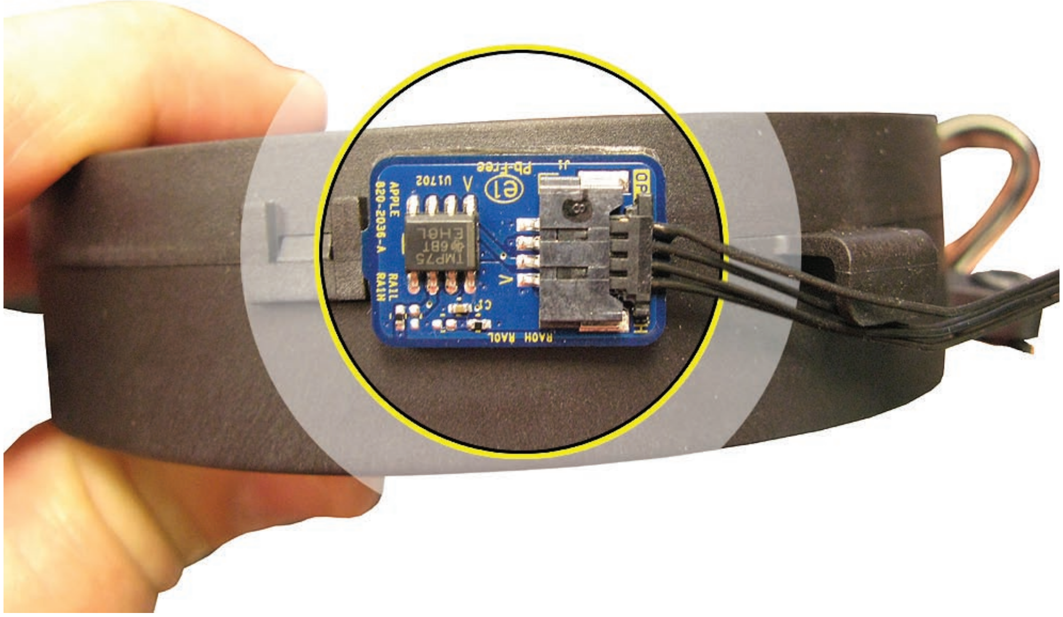


Removing the Ambient Temperature Sensor Cable

1. Disconnect the ambient temp sensor cable and the fan cable from the logic board. Lift the fan out of the system.



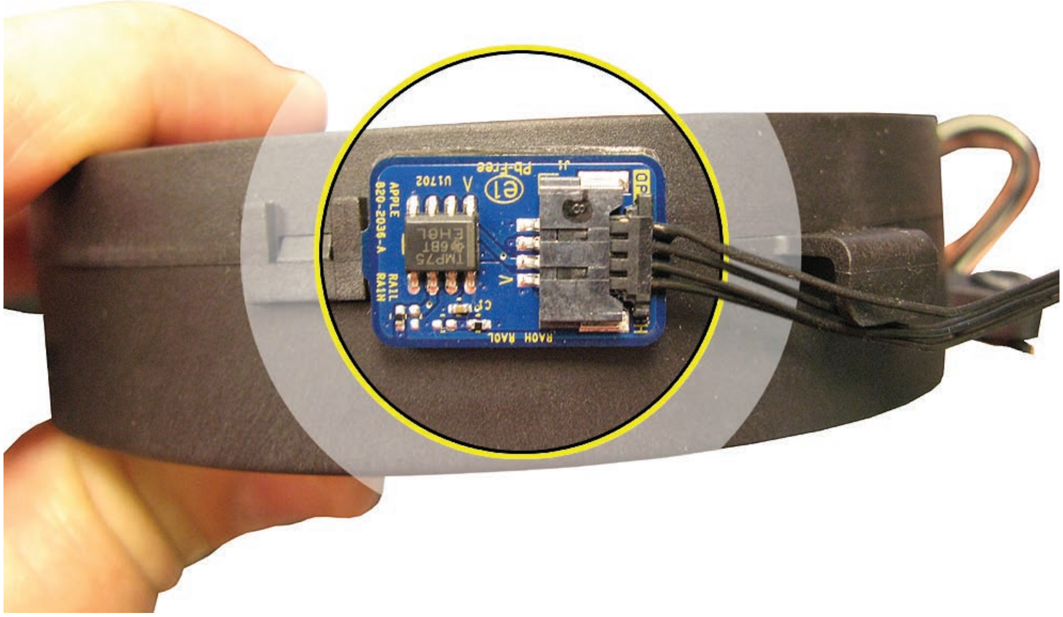
2. Disconnect the cable from the sensor board on the speaker.



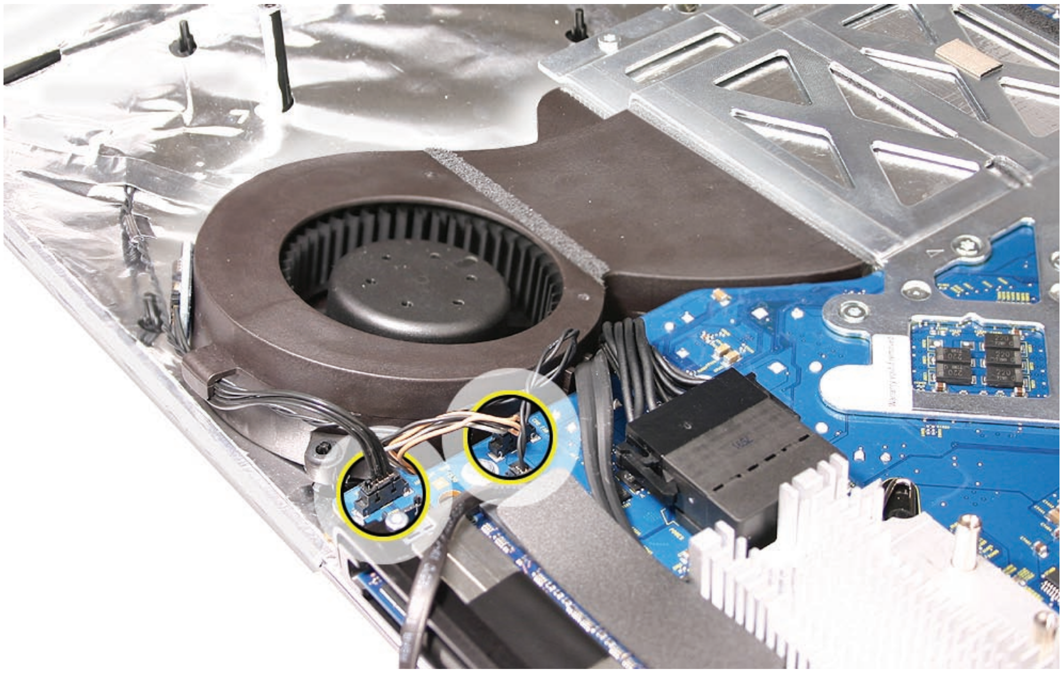
3. Remove the cable.

Replacing the Ambient Temperature Sensor Cable

1. Connect the cable to the sensor board on the speaker.



2. Connect the sensor cable and the fan cable to the logic board.



3. **Replace the front bezel.**

4. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.

5. Replace the access door.

Ambient Temperature Sensor

Tools

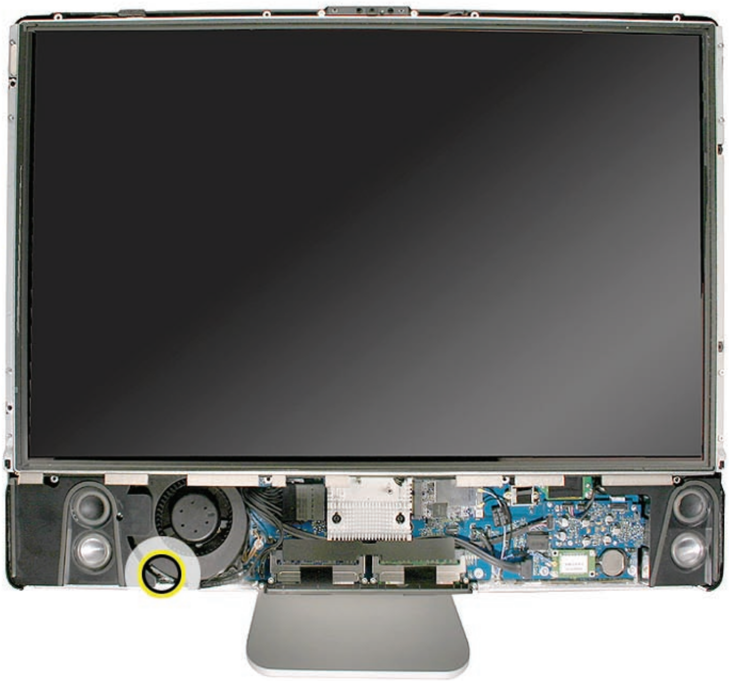
- Black stick (or other nonconductive nylon or plastic flat-blade tool)
- Permanent ink felt-tip pen

Preliminary Steps

Before you begin, remove the following:

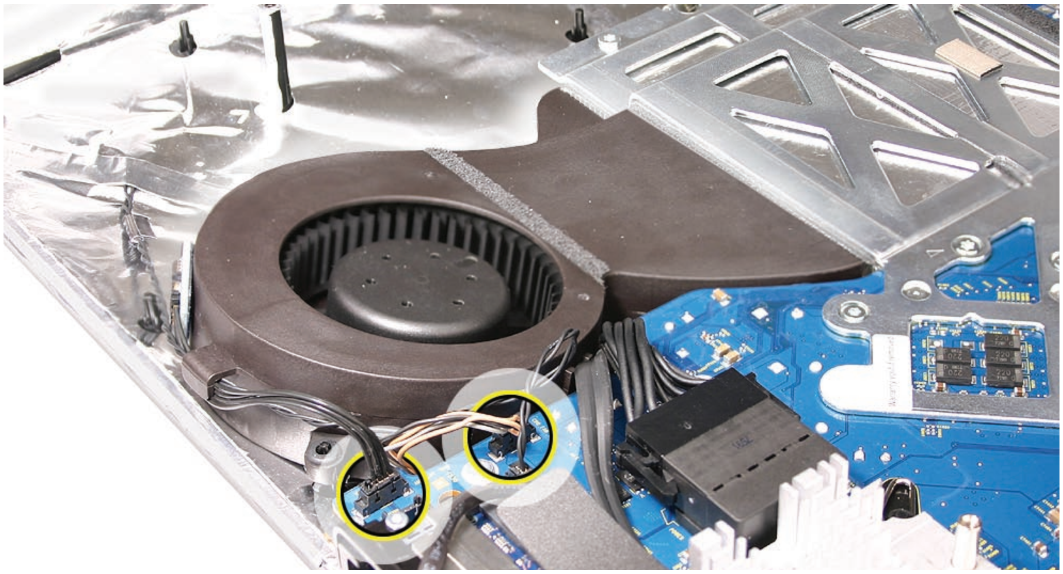
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, Left

Part Location

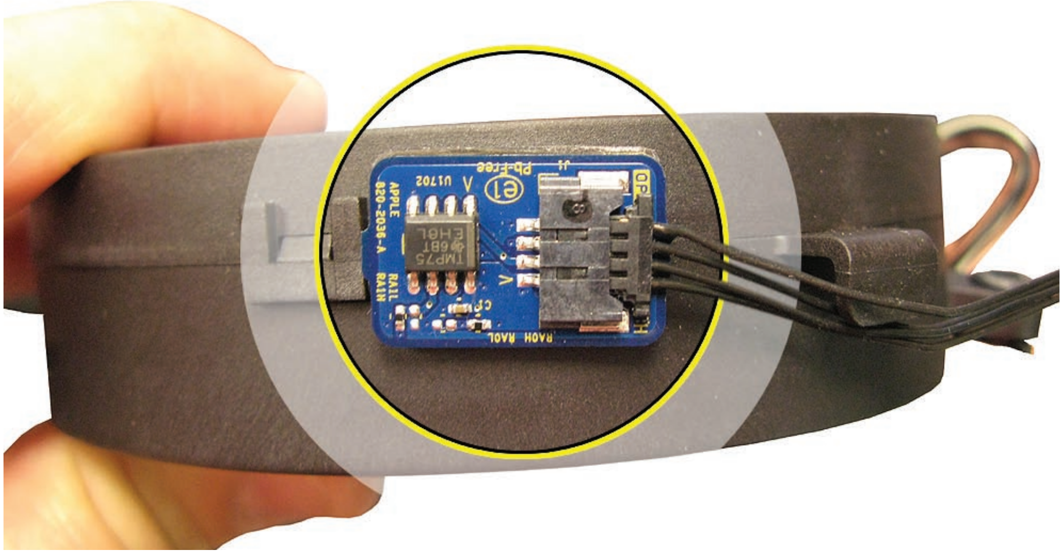


Removing the Ambient Temperature Sensor

1. Disconnect the ambient temperature sensor cable and the fan cable from the logic board.



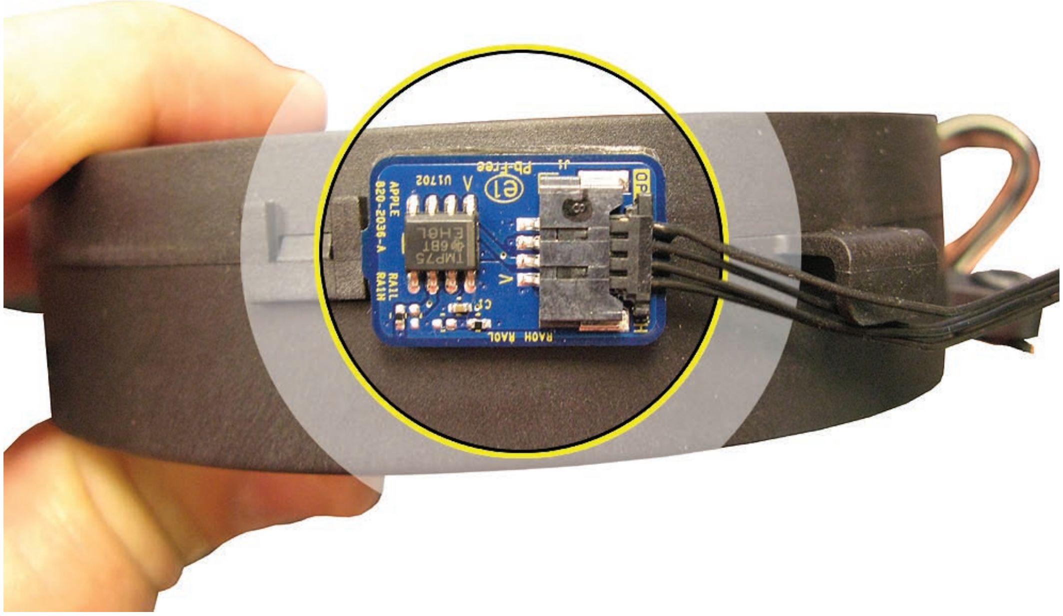
2. Lift the CPU fan from the system. Disconnect the ambient temperature sensor cable from the cpu fan..



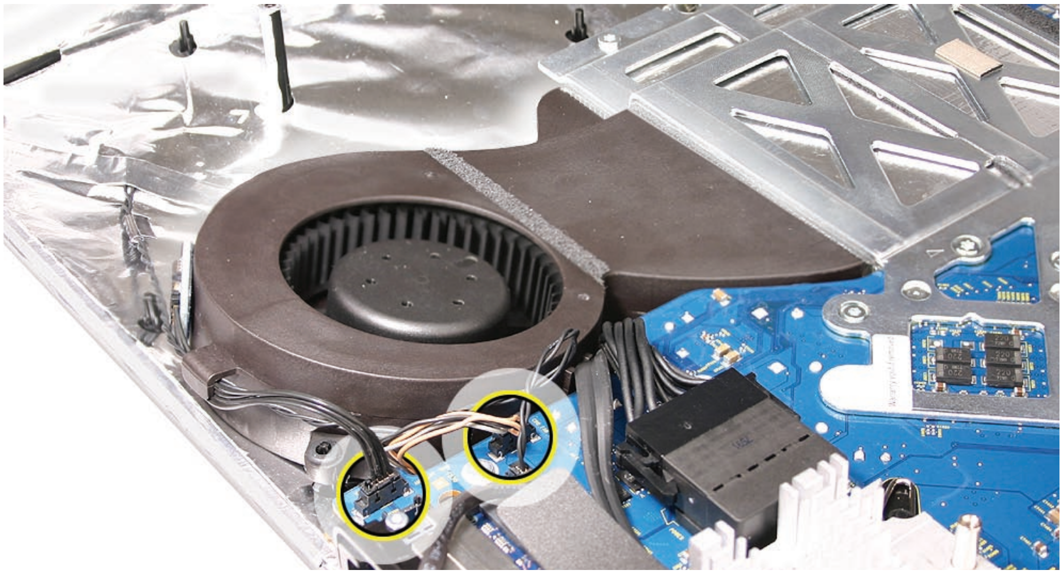
3. With a black stick, pry the sensor from the fan.

Replacing the Ambient Temperature Sensor

1. **Replacement Note:** If you are replacing the CPU fan transfer the sensor and the sensor cable to the replacement fan.



2. Place the fan into the rear housing. Connect the temperature sensor cable and the fan cable to the logic board.



3. [Replace the LCD panel.]

4. [Replace the front bezel.]

5. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
6. **Replace the access door.**

LVDS Cable

Tools

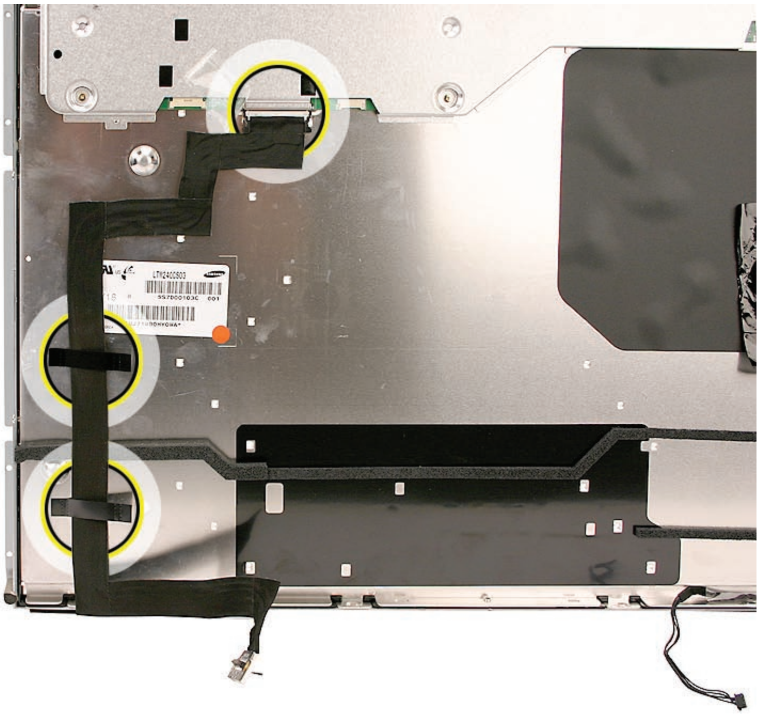
- Torx T6 screwdriver
- Soft, clean towel or cloth

Preliminary Steps

Before you begin, remove the following:

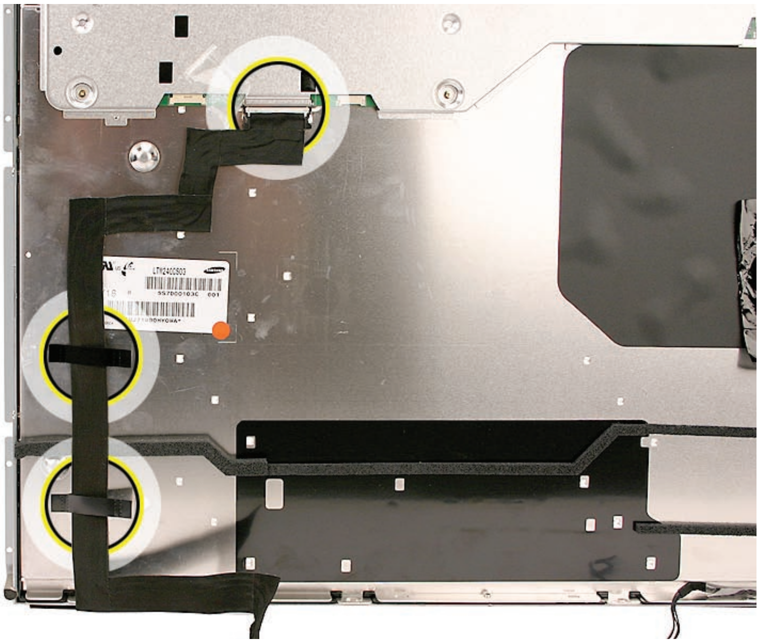
- Access door
- Glass panel
- Front Bezel
- LCD display

Part Location

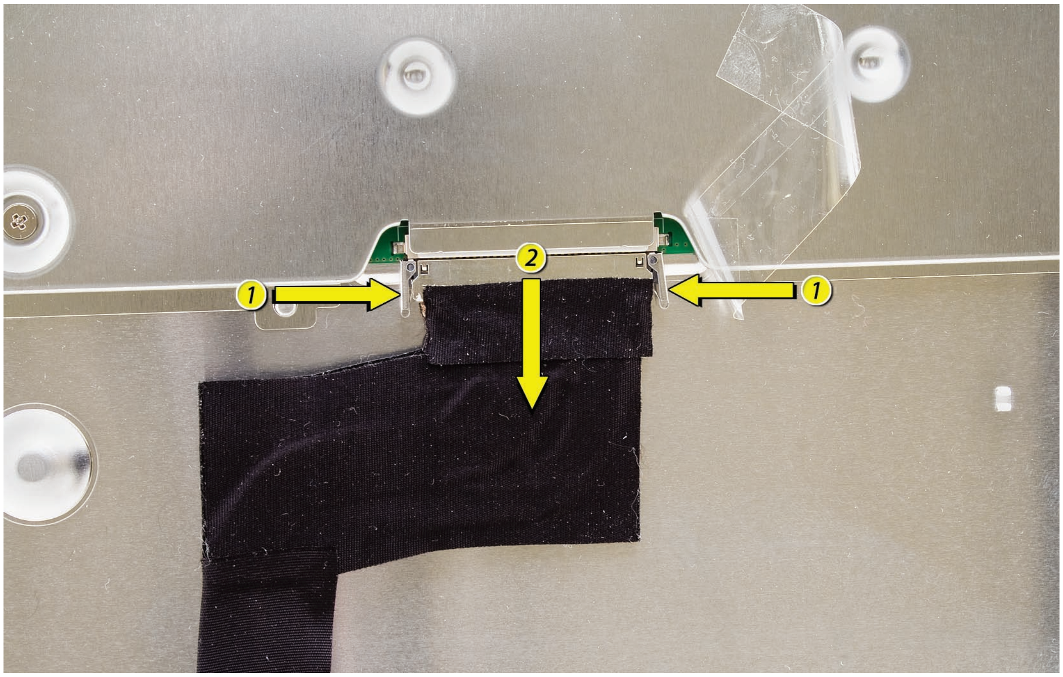


Removing the LVDS Cable

1. With the display face down on a soft cloth, peel up the two strips of black tape from the LVDS cable on the back of the display panel.



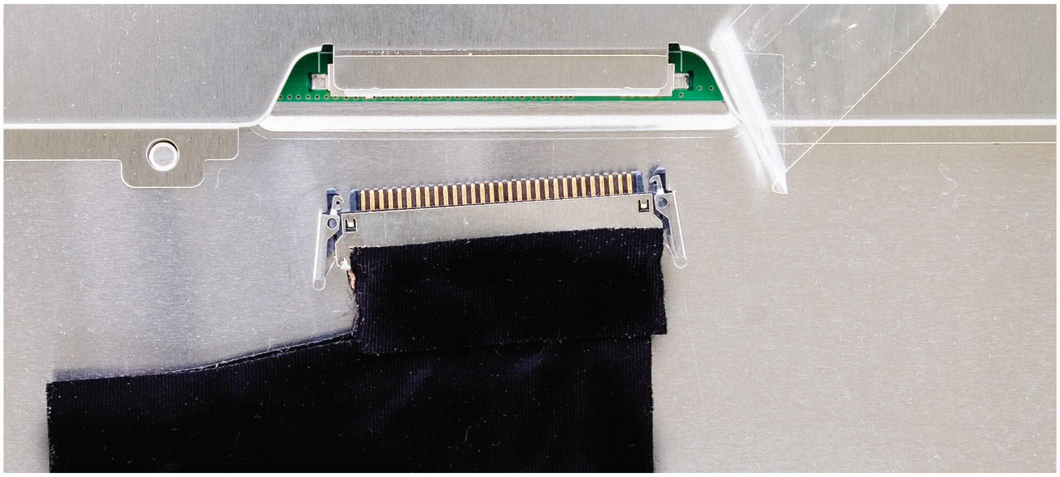
2. Press in on the LVDS connector lock release clips (1) and gently pull (2) to disconnect the LVDS cable from the back of the panel.



3. Lift the LVDS cable from the display panel.

Replacing the LVDS Cable

1. Connect the LVDS cable to the rear of the display panel.



2. Replace the tape over the LVDS cable connector.
3. With both the LVDS cable and the inverter cable connected to the back of the display panel, install the display panel with eight mounting screws.
4. Connect the other end of the inverter cable to the power supply.
5. Connect the LVDS cable to the logic board and replace the two T6 screws.
6. Replace the front bezel.
7. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
8. Replace the access door.

Inverter Cable

Tools

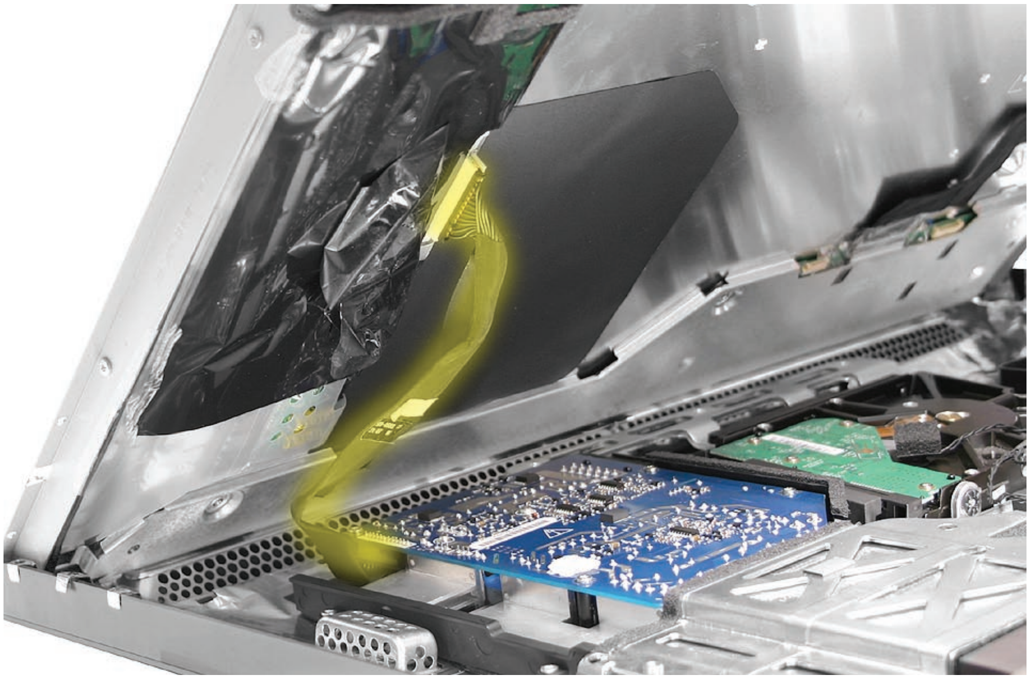
- Torx T6 screwdriver
- Soft, clean towel or cloth

Preliminary Steps

Before you begin, remove the following:

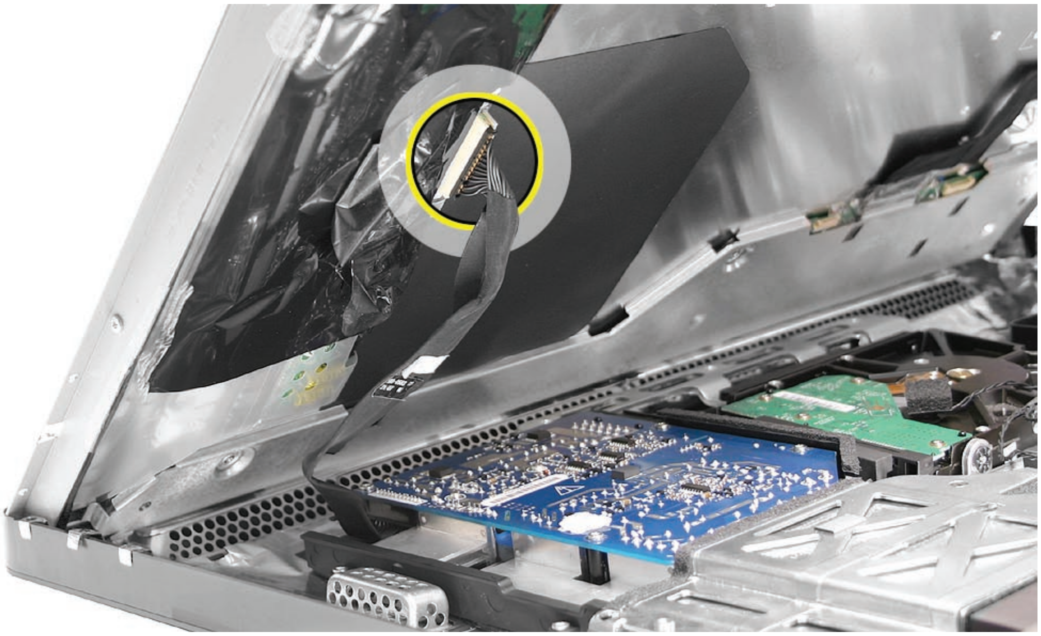
- Access door
- Glass panel
- Front bezel
- LCD display panel

Part Location



Removing the Inverter Cable

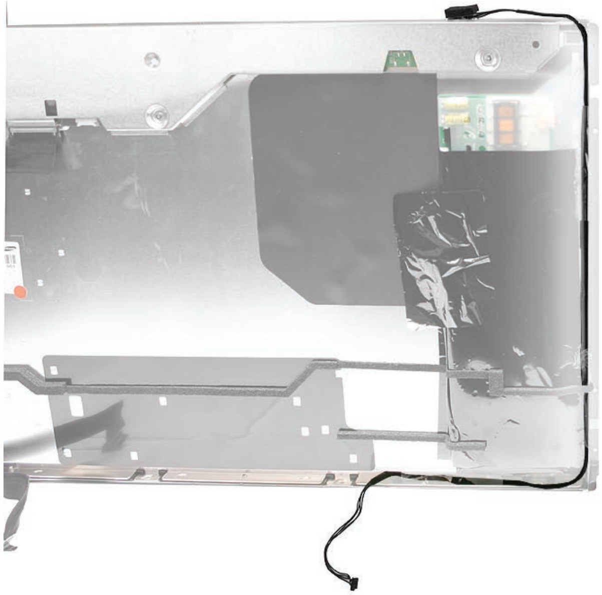
1. Disconnect the inverter cable from the back of the display panel.



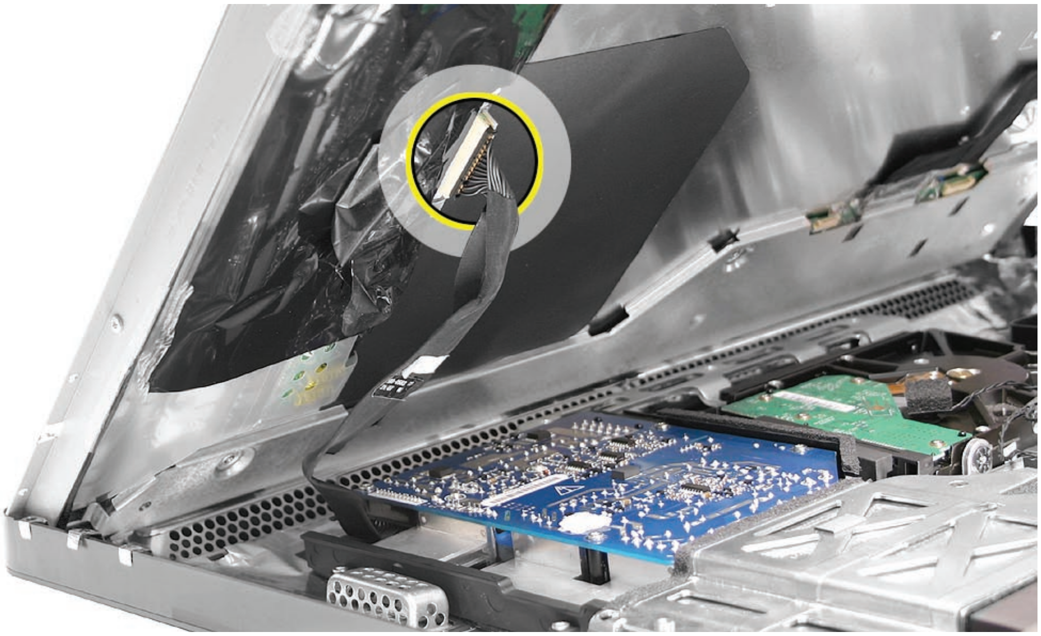
2. Disconnect the other end of the cable from the power supply.
3. Place the LCD panel in a clean ESD bag until the repair is complete to prevent the buildup of static charges which may attract dust particles to the surface of the display. Store the LCD panel in an anti-static bag whenever it has been removed from the system.

Replacing the Inverter Cable

1. Remove the LCD panel from the ESD bag.
2. Make sure the display temp sensor cable is connected to the display sensor at the top of the display panel.

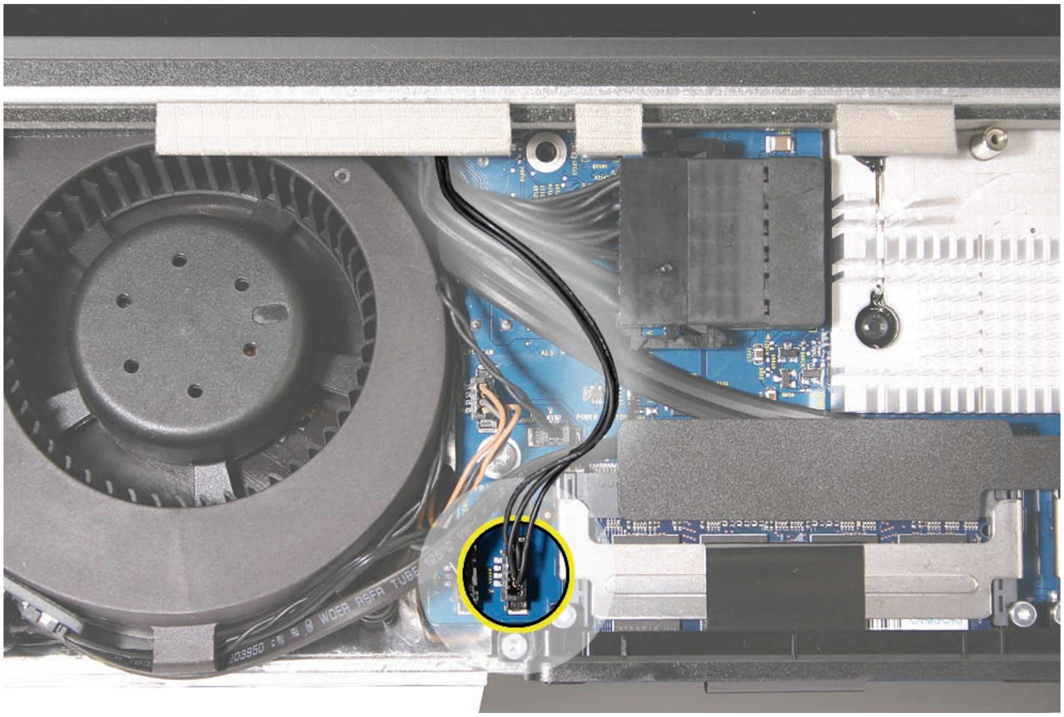


3. Connect the inverter cable to the inverter board on the rear of the display panel.



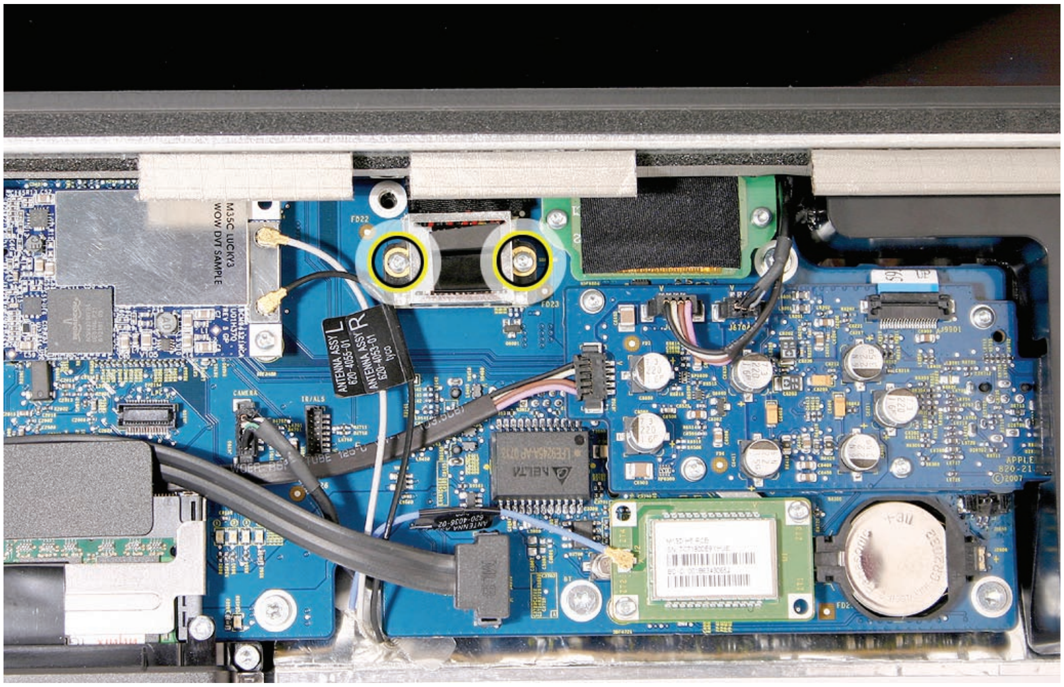
4. Connect the other end of the inverter cable to the power supply.

5. Lower the display panel into the computer.
6. Connect the display temp sensor cable to the left side of the logic board.

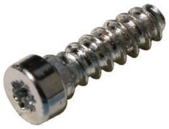


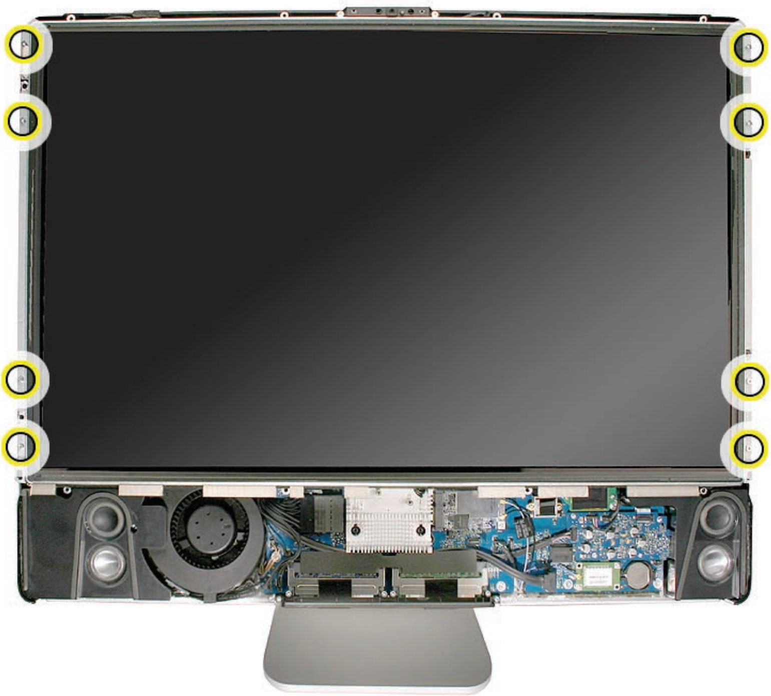
7. Connect the LVDS cable to the logic board. Replace the two T6 screws.

922-7010



8. Install the eight mounting screws.





9. **Replace the front bezel.**

10. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.

11. **Replace the access door.**

Speaker, Right

Tools

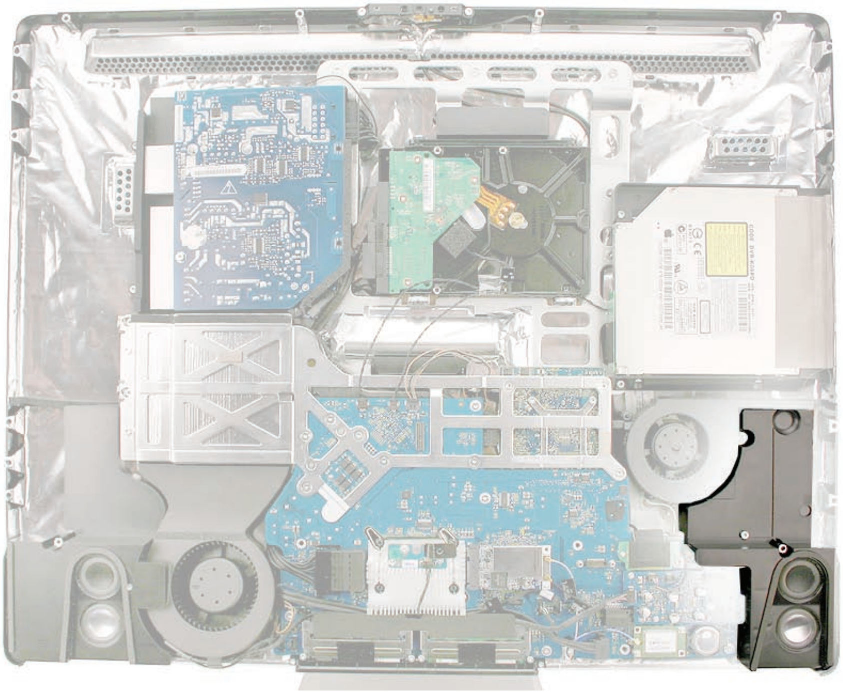
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel
- LCD Panel

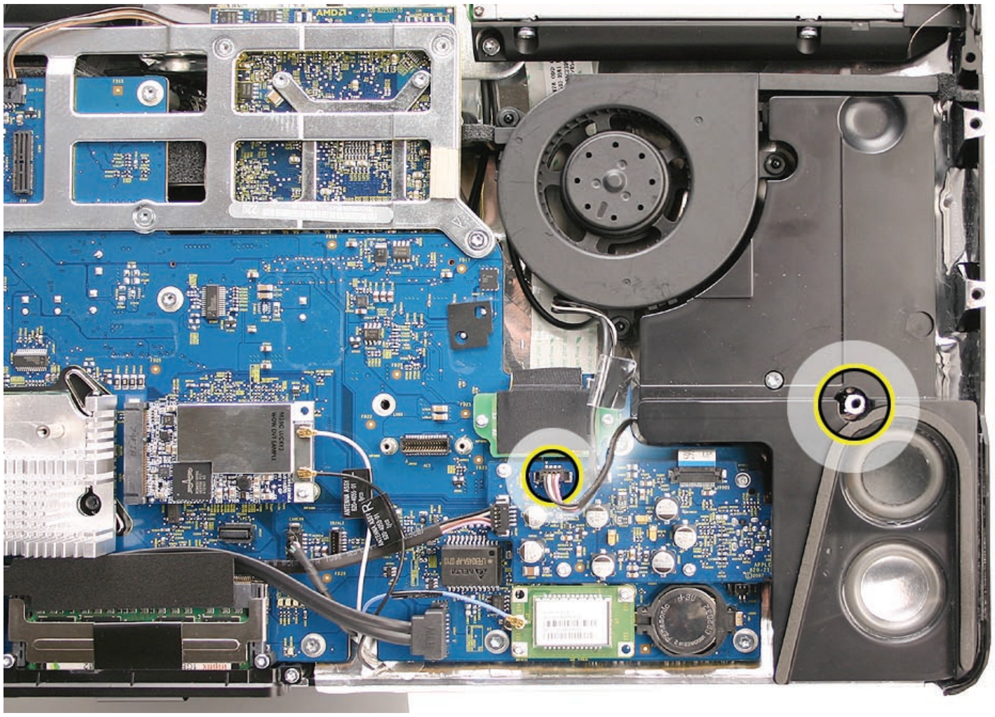
Part Location



Removing the Right Speaker

1. Remove the T8 screw from the right speaker. **Replacement Note:** The shorter of the two speaker mounting screws is used to secure the right speaker; the longer screw secures the left speaker.

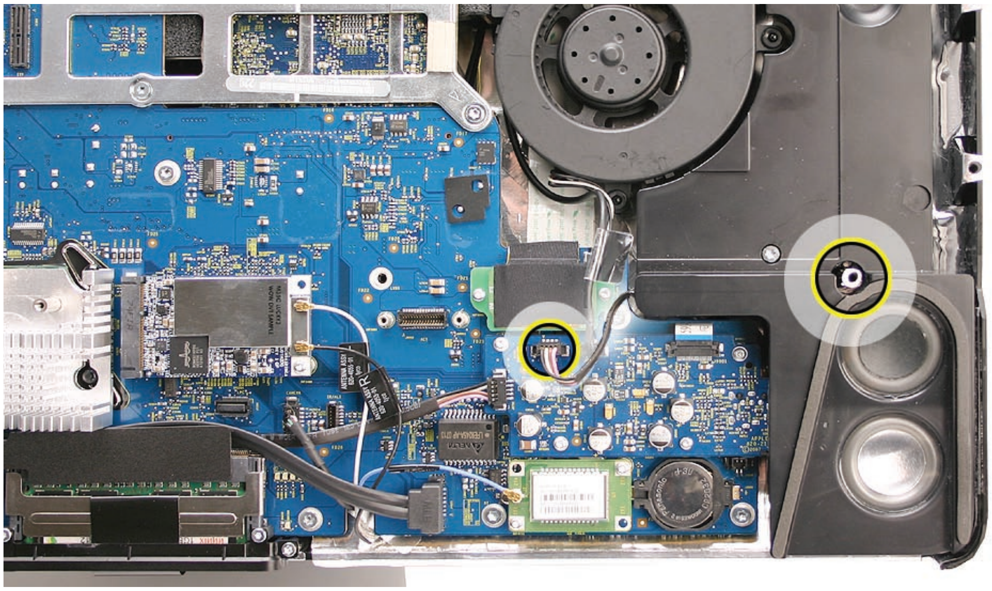
2. Disconnect the speaker cable from the audio board.



3. Pull it up and out of the computer assembly.

Replacing the Right Speaker

1. Install the speaker in the computer assembly.
2. Connect the speaker cable to the audio board.
3. Replace the T8 screw on the speaker.



4. Replace the display panel.
5. Replace the front bezel.
6. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
7. Replace the access door.

Optical Drive Fan

Tools

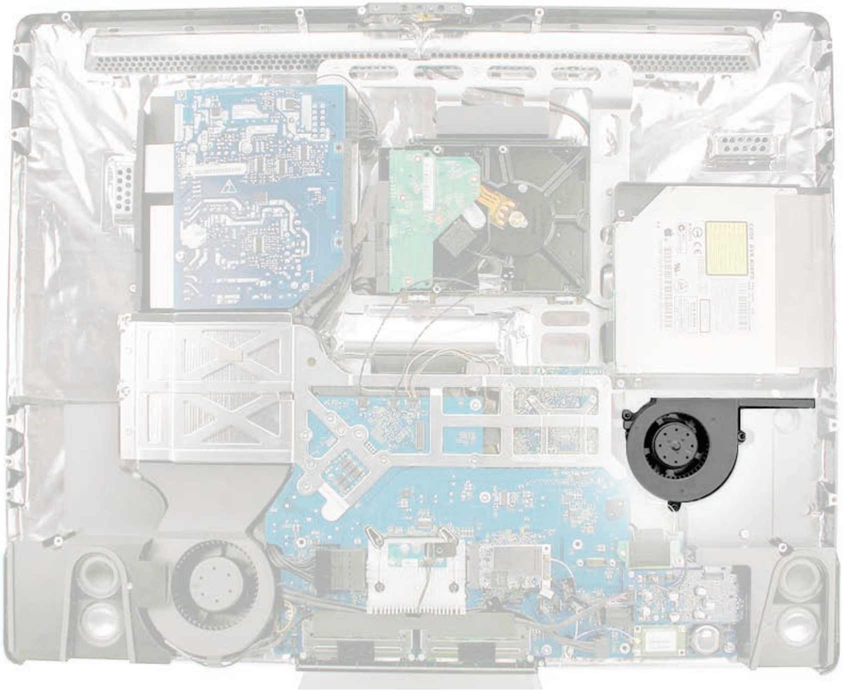
- No tools are required to remove the optical drive fan.

Preliminary Steps

Before you begin, remove the following:

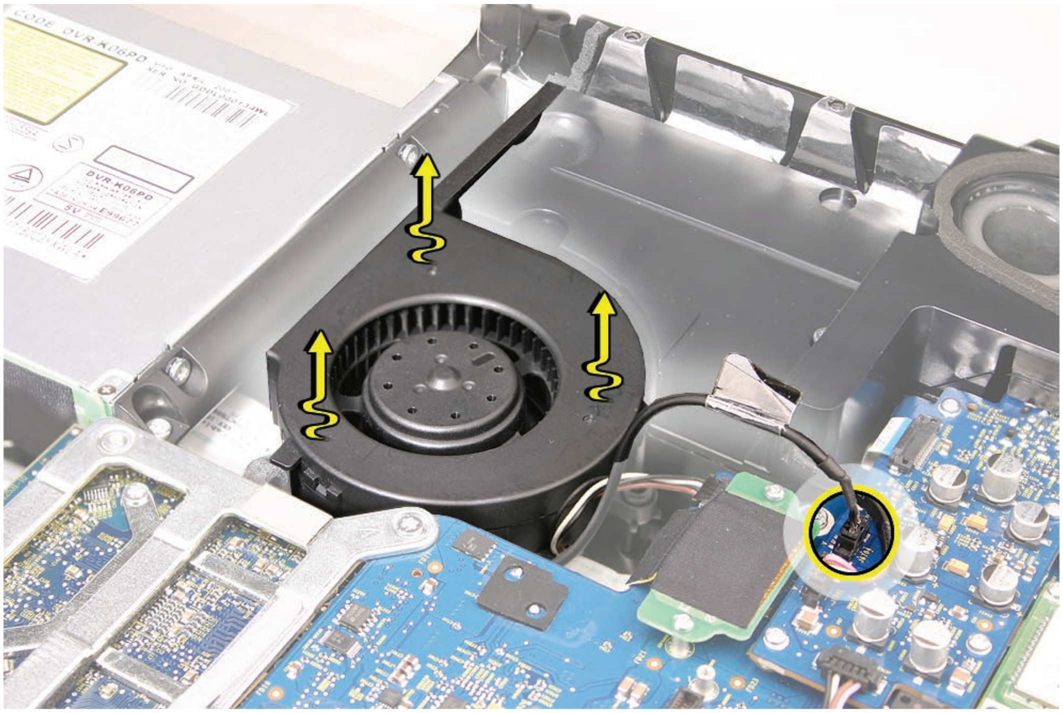
- Access door
- Glass panel
- Front bezel
- LCD Panel

Part Location



Removing the Optical Drive Fan

1. Disconnect the fan cable from the logic board.
2. Lift the fan off the guide posts on the rear housing.



Replacing the Optical Drive Fan

1. Lower the fan onto the guide posts in the rear cover. Connect the fan cable to the audio board.
2. Replace the display panel.
3. Replace the front bezel.
4. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
5. Replace the access door.

CPU Fan

Tools

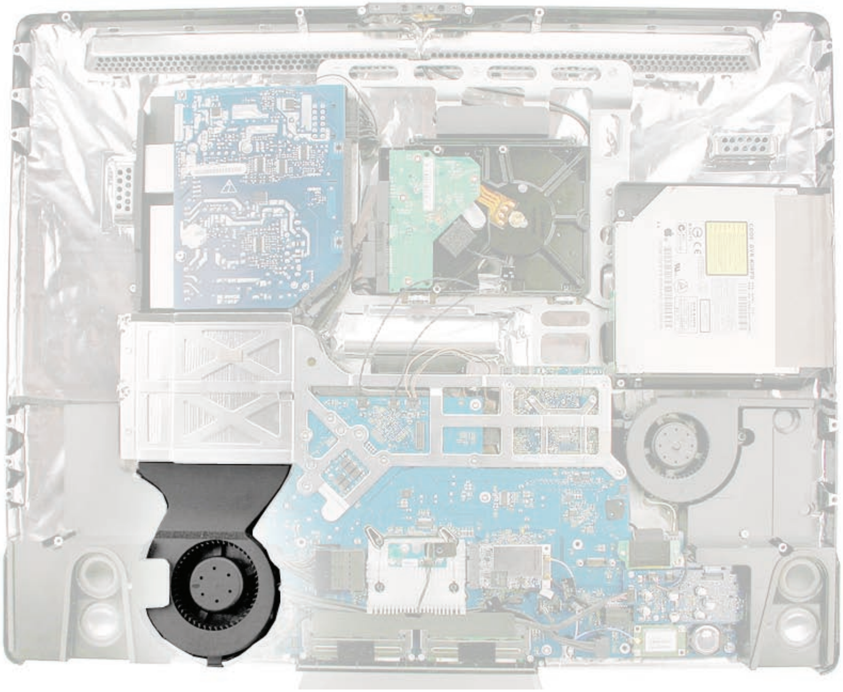
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

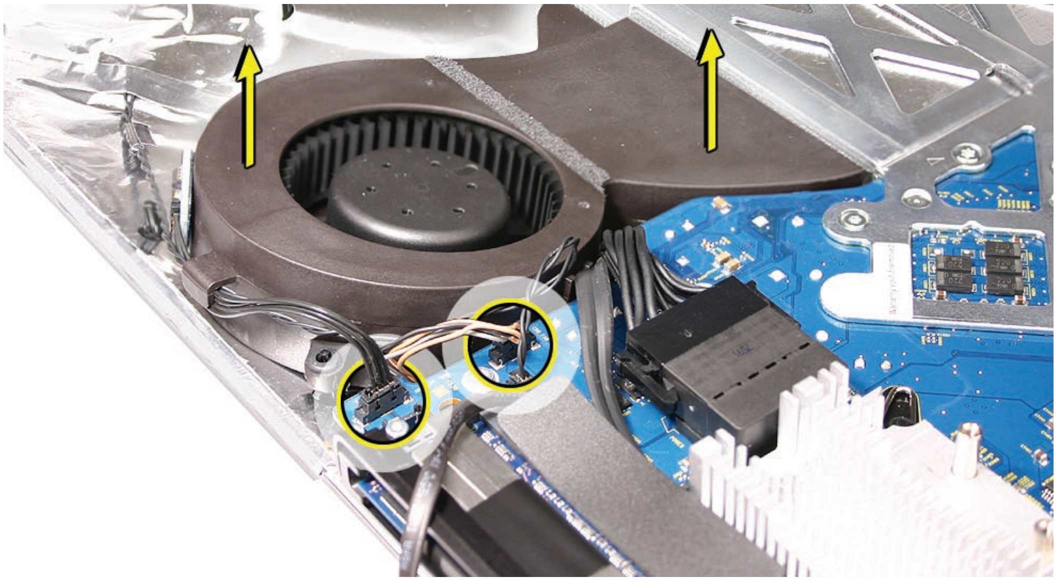
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Left speaker

Part Location



Removing the CPU Fan

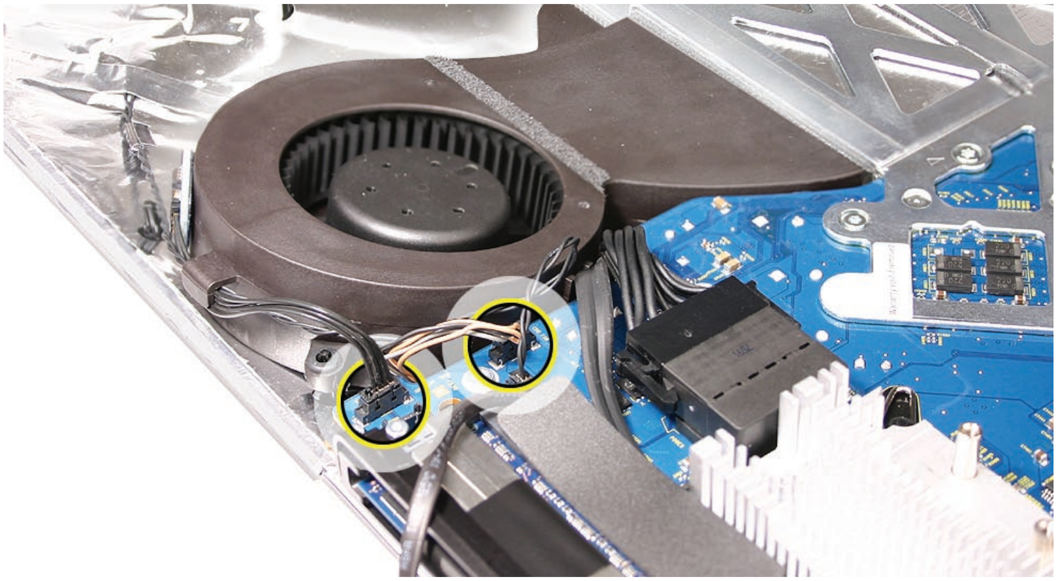
1. Disconnect the fan cable and the ambient temp sensor cable from the lower left corner of the logic board.



2. Lift the fan off the guide posts on the rear housing.

Replacing the CPU Fan

1. Lower the fan onto the guide posts in the rear housing. Push it down snug onto the posts.
2. Connect the ambient temp sensor cable and the fan cable to the logic board connectors.



3. Replace the left speaker.
4. Replace the display panel.
5. Replace the front bezel.
6. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
7. Replace the access door.

Power Supply, AC/DC

Tools

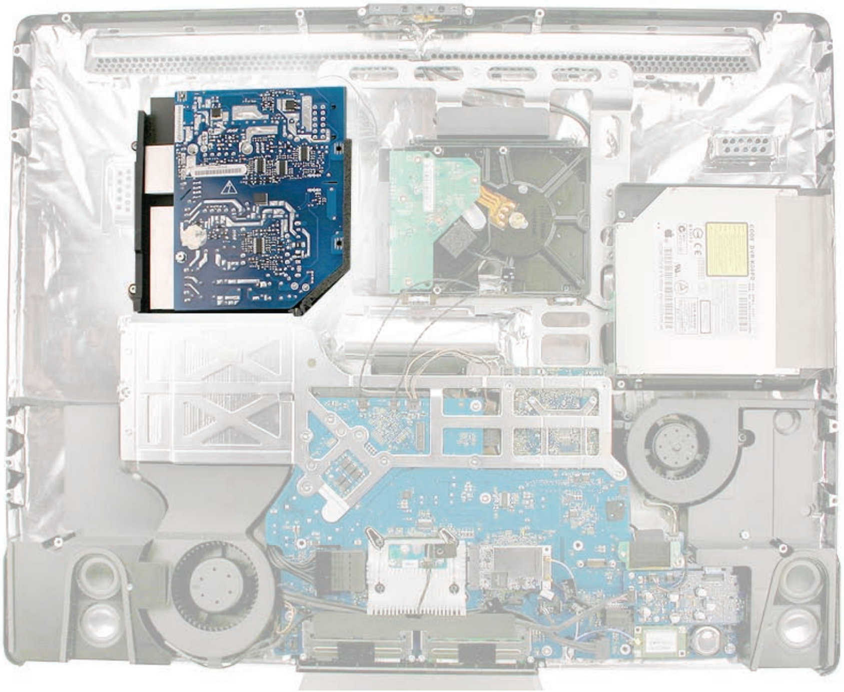
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel
- LCD Panel

Part Location

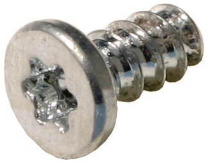


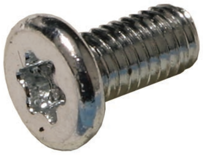
Removing the AC/DC Power Supply

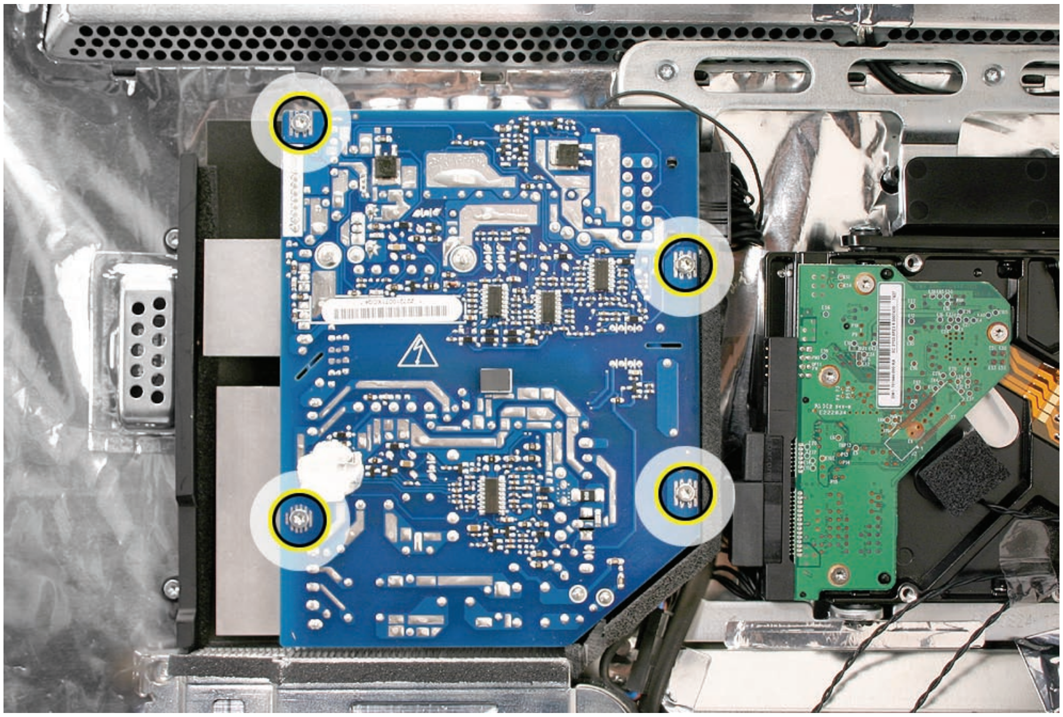
WARNING: HIGH VOLTAGE:The AC/DC power supply PCB remains powered up whenever the system is plugged in, whether or not the system has been turned on. Use extreme caution when troubleshooting the system with the front bezel removed.

- **Don't work alone. In the event of an electrical shock it is important to have another individual present who can provide assistance.**
- **Keep one hand in your pocket when working on any iMac system that is plugged in. This will help ensure that your body does not provide a path to ground in the event that you accidentally make contact with the line voltage.**
- **Don't wear jewelry, watches, necklaces, or other metallic articles that could present a risk if they accidentally make contact with the power supply circuitry.**

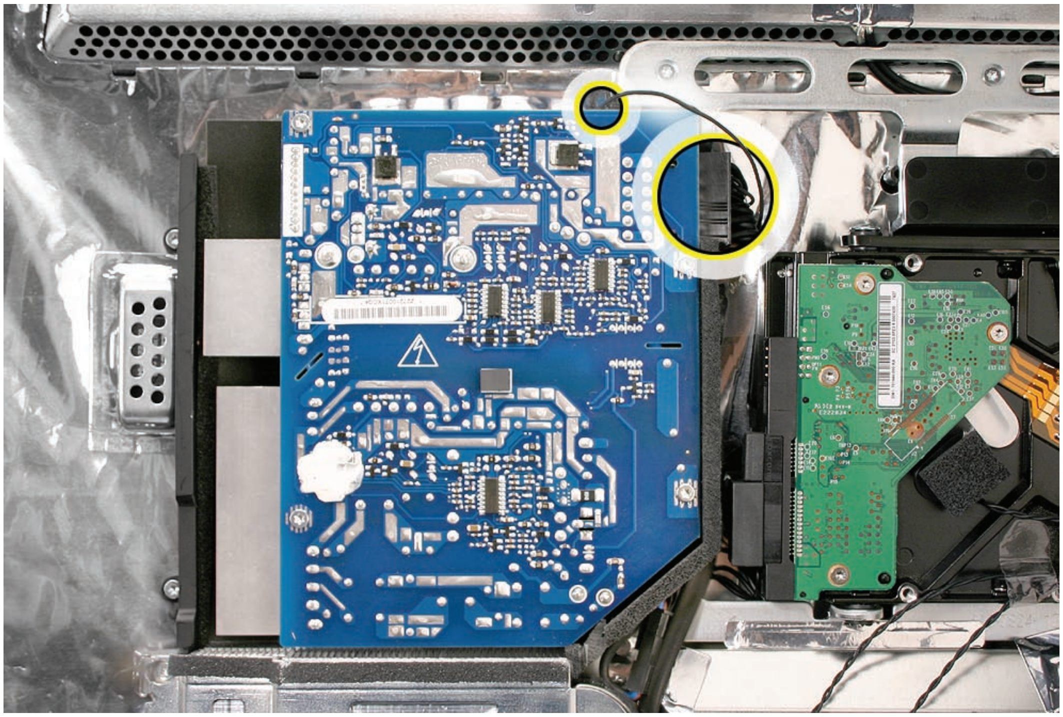
1. Using a Torx T10 screwdriver,remove the four screws from the AC-DC power supply board. **Replacement Note:** Install the machine screws on the right side and the self tapping screws on the left side.



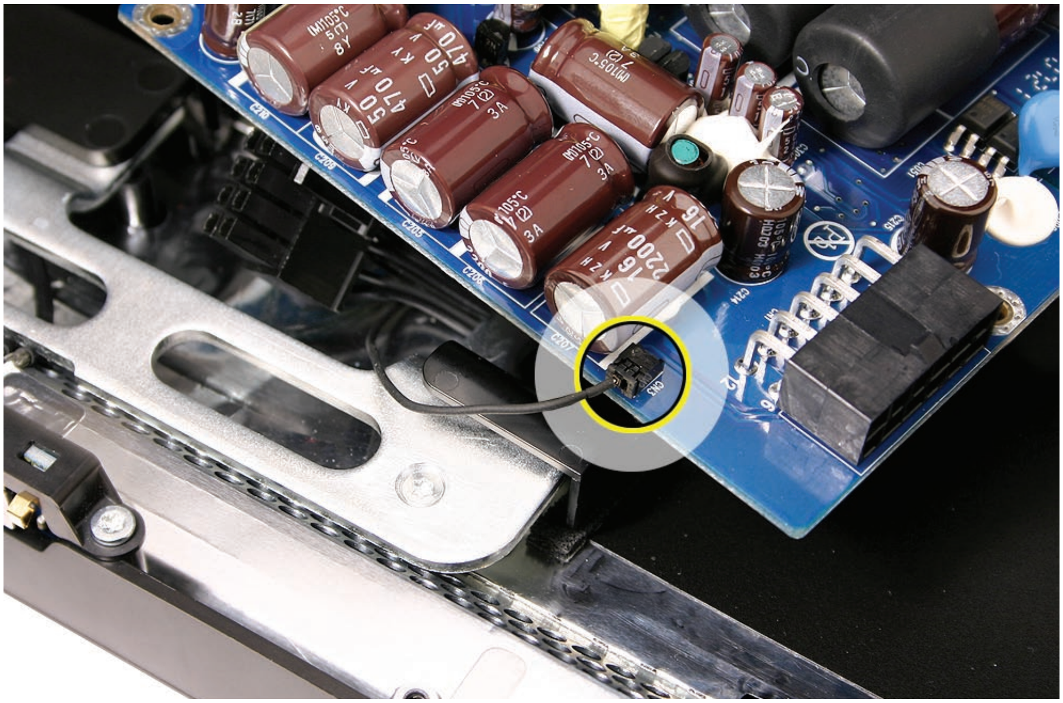




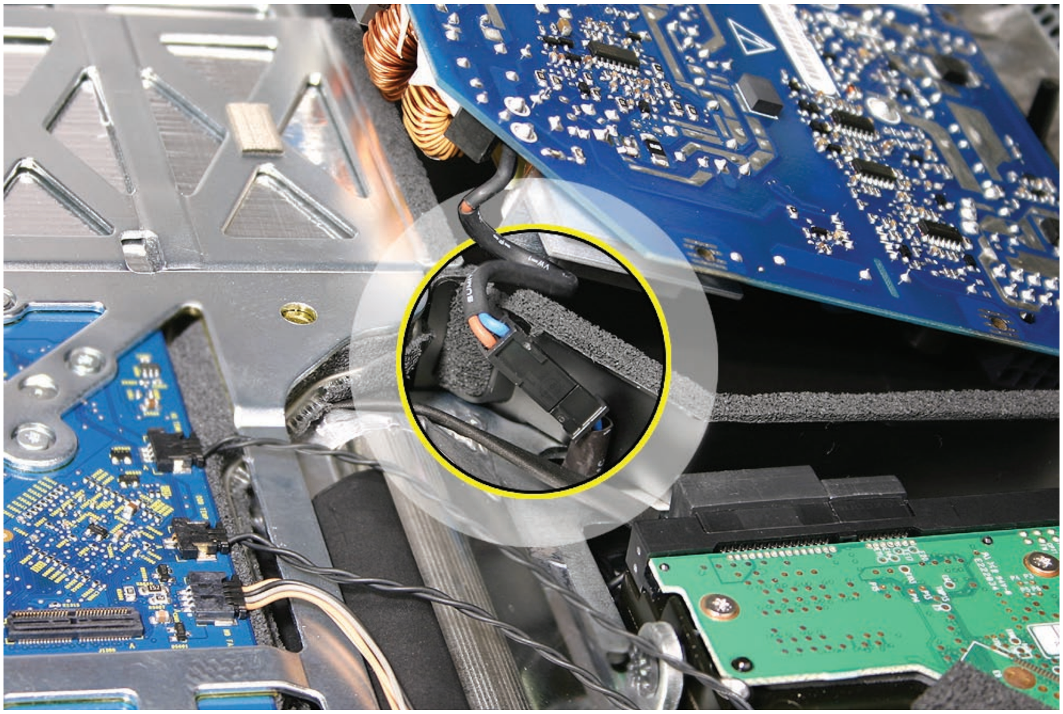
2. Lift the power supply up a bit and pinch the black tab on the big connector to disconnect the main power supply cable on the right side. Carefully remove the small ground connector cable from the underside of the power supply. (See next photo.)



3. This shows a close up of the two-pin ground cable connector on the underside of the power supply.



4. Disconnect the AC power inlet cable tucked neatly between the right pressure wall (black plastic piece along the right side of the power supply) and the top of the logic board. Lift the power supply from the rear housing.

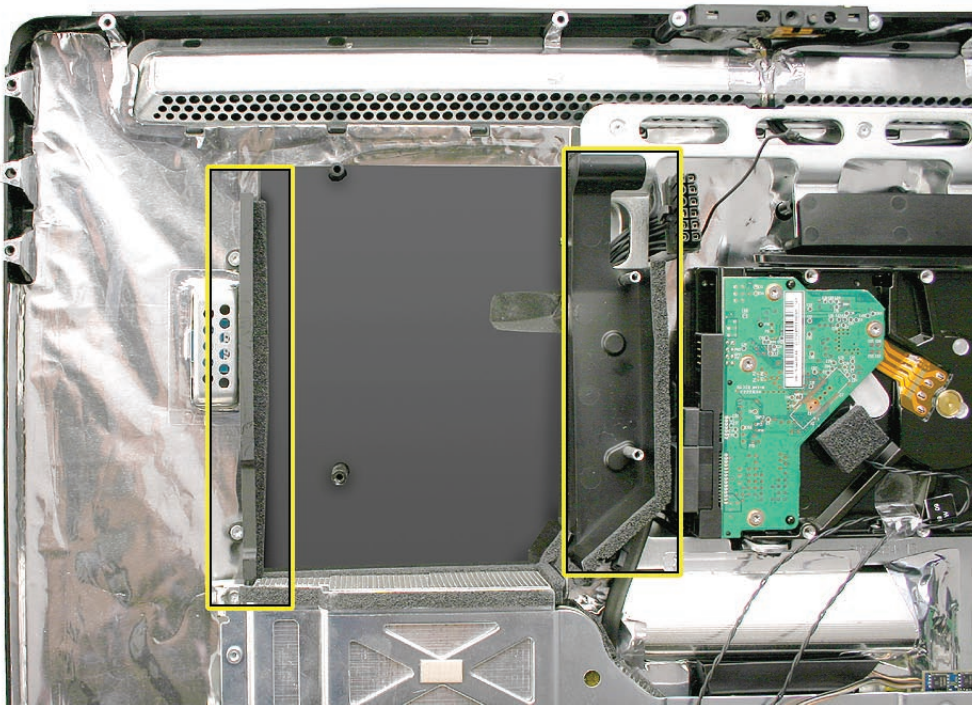


Replacing the AC/DC Power Supply

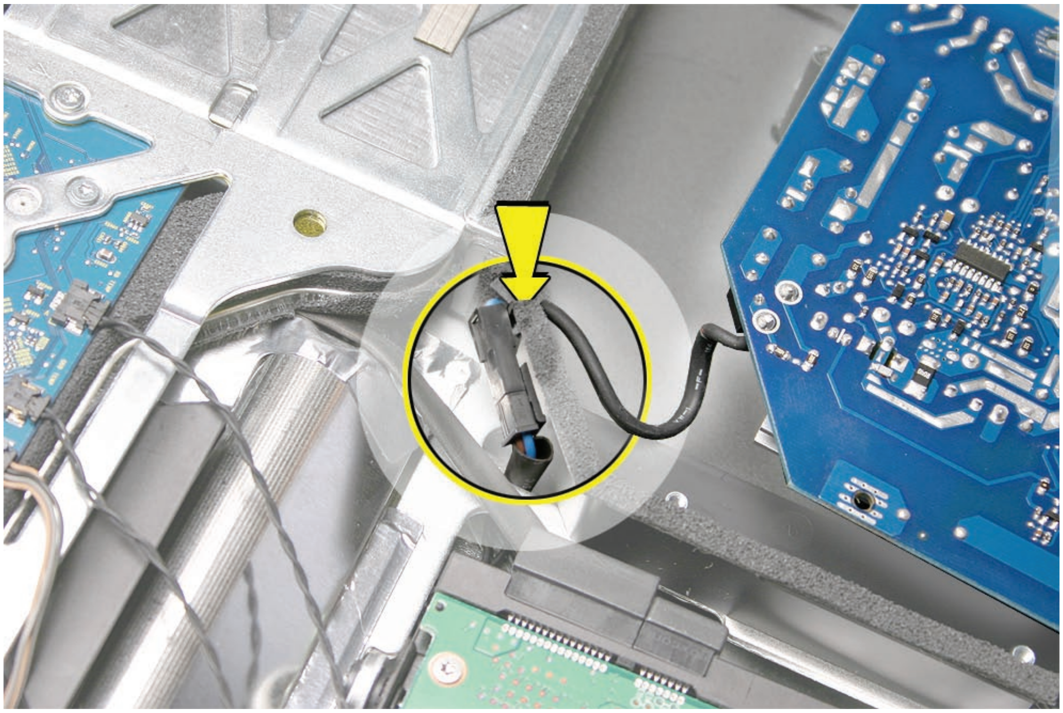
WARNING: The AC/DC power supply PCB remains powered up whenever the system is plugged in, whether or not the system has been turned on. Use extreme caution when troubleshooting the system with the front bezel removed.

- **Don’t work alone. In the event of an electrical shock it is important to have another individual present who can provide assistance.**
- **Keep one hand in your pocket when working on any iMac system that is plugged in. This will help ensure that your body does not provide a path to ground in the event that you accidentally make contact with the line voltage.**
- **Don’t wear jewelry, watches, necklaces, or other metallic articles that could present a risk if they accidentally make contact with the power supply circuitry.**

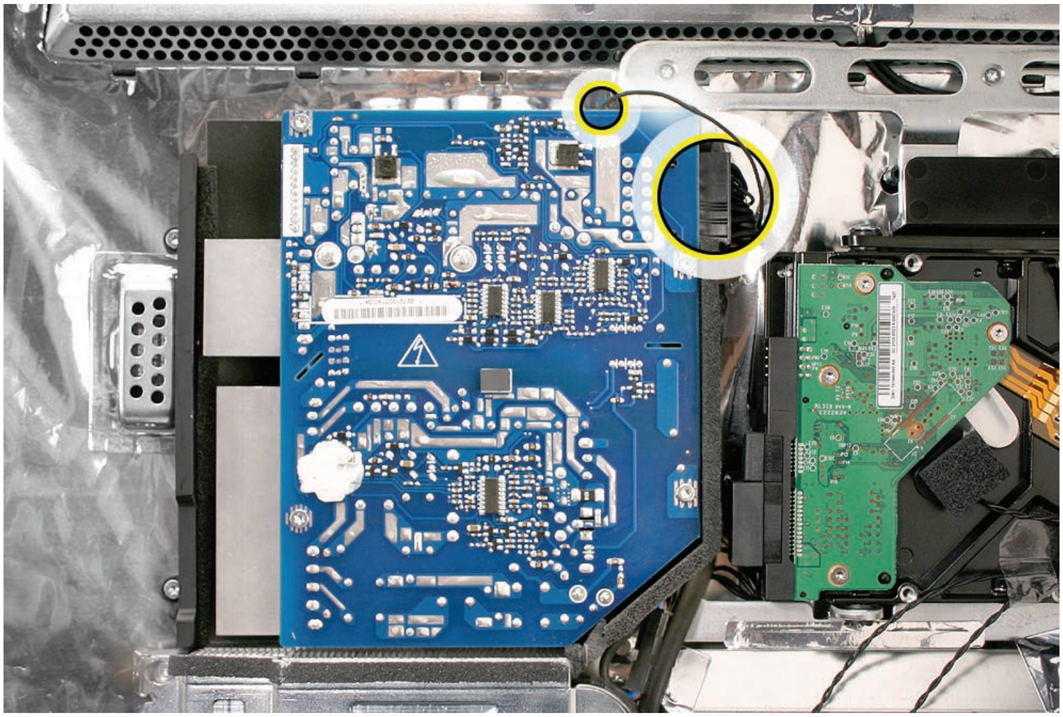
1. Make sure the right and left pressure walls are in place.



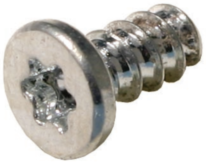
2. Connect the AC inlet cable and tuck the connector into the slot (see arrow) on the right pressure wall.

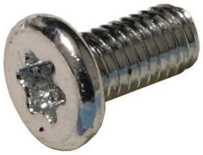


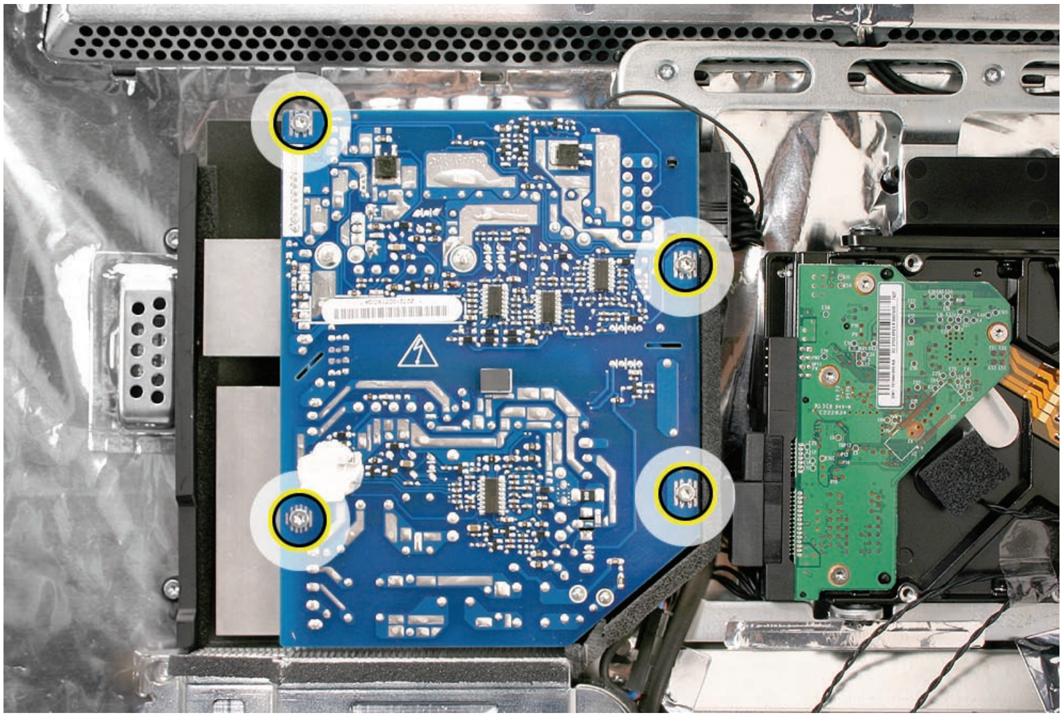
3. Connect the DC power cable and the ground cable to the power supply.



4. Replace the four T10 power supply screws. Install the machine screws (on the right side) first when installing the power supply.







.

5. Replace the display panel.

6. Replace the front bezel.

7. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.

8. Replace the access door.

Hard Drive

Tools

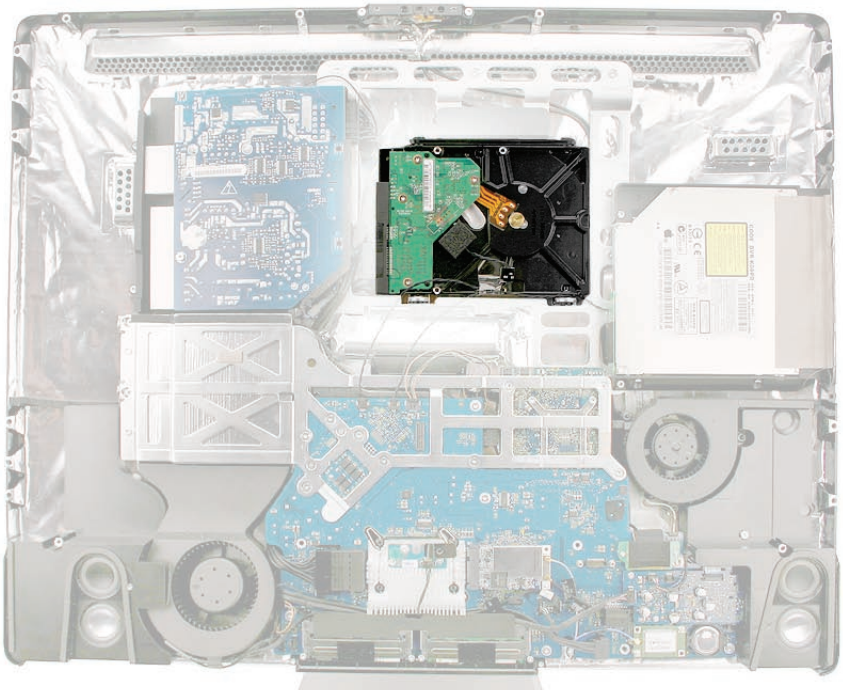
- Torx T10 screwdriver
- Torx T8 screwdriver (if removing clip from hard drive)

Preliminary Steps

Before you begin, remove the following:

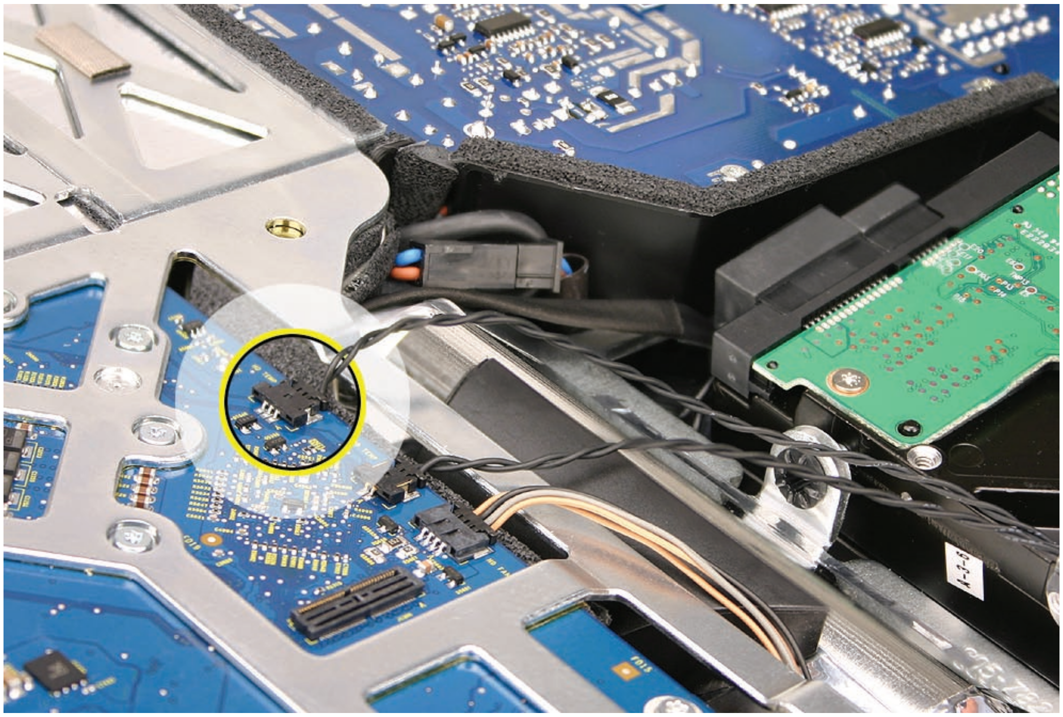
- Access door
- Glass panel
- Front bezel
- LCD Panel

Part Location

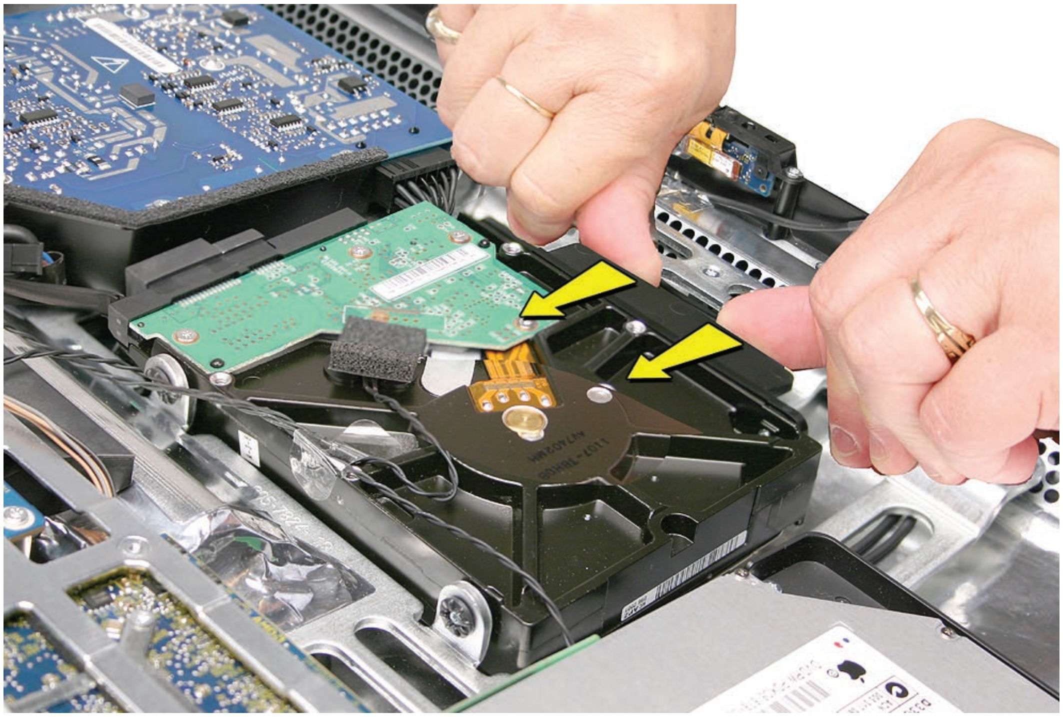


Removing the Hard Drive

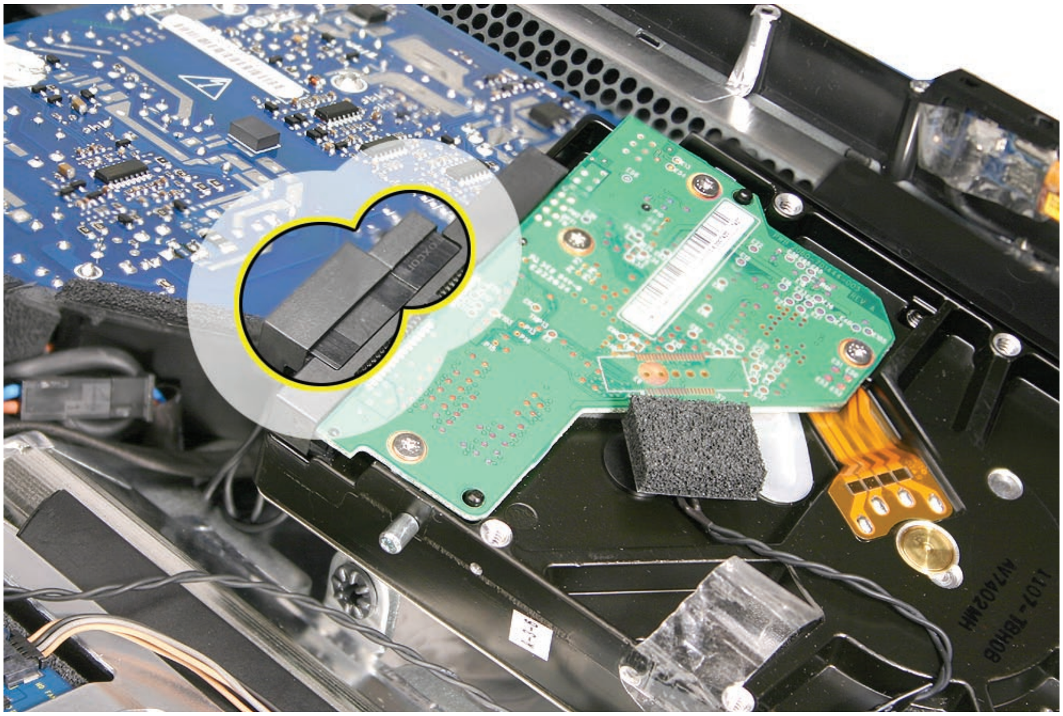
1. Disconnect the hard drive temperature sensor cable from the top of the logic board.



2. Push HARD and toward the logic board on the black plastic clip at the top of the hard drive to release it from the chassis.



3. Disconnect the power and data cables from right side of the hard drive.

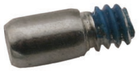


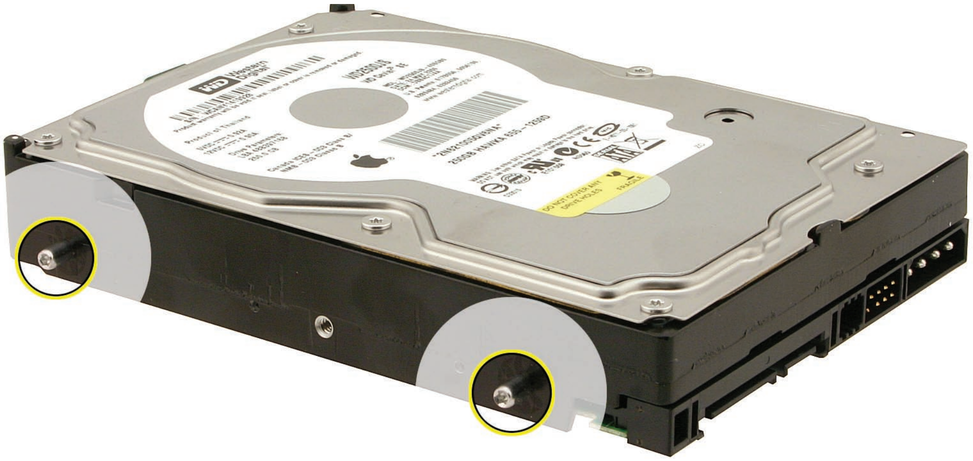
4. Lift the hard drive from the computer assembly.

5. If you are replacing the hard drive continue with the procedure. Remove the temperature sensor cable, screws, and black clip and transfer them to the replacement drive.

6. At the lower side of the drive, remove the two screw pins.

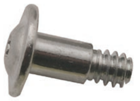
922-7001

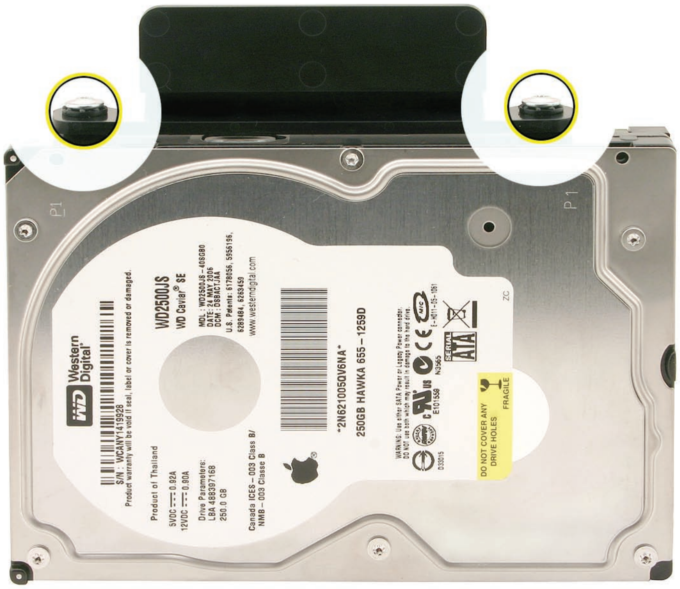




7. At the upper side of the drive, remove the two screws and the plastic clip.

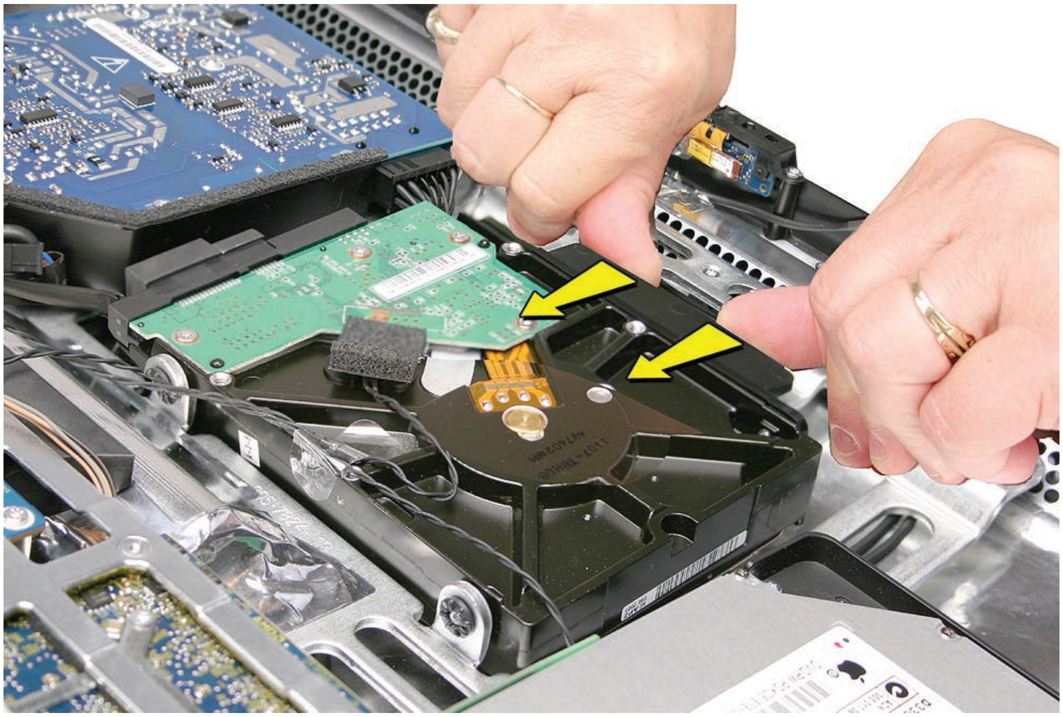
922-7019



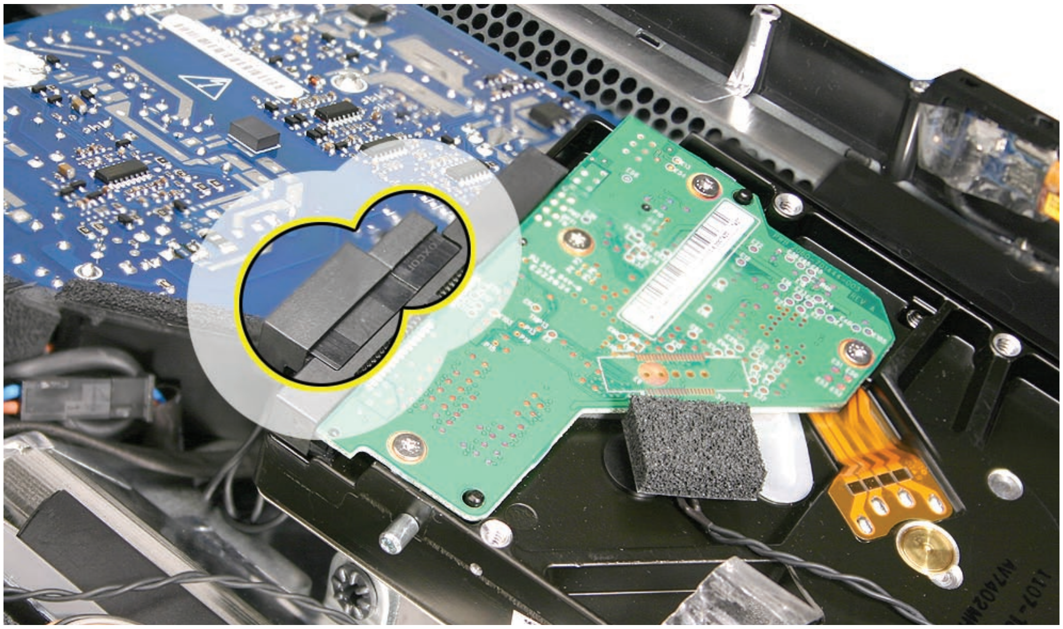

P1
Western Digital
WD2500JS
WD Caviar® SE
250GB HAWKA 655-1259D
DO NOT COVER ANY DRIVE HOLES
FRAGILE
P1

Replacing the Hard Drive

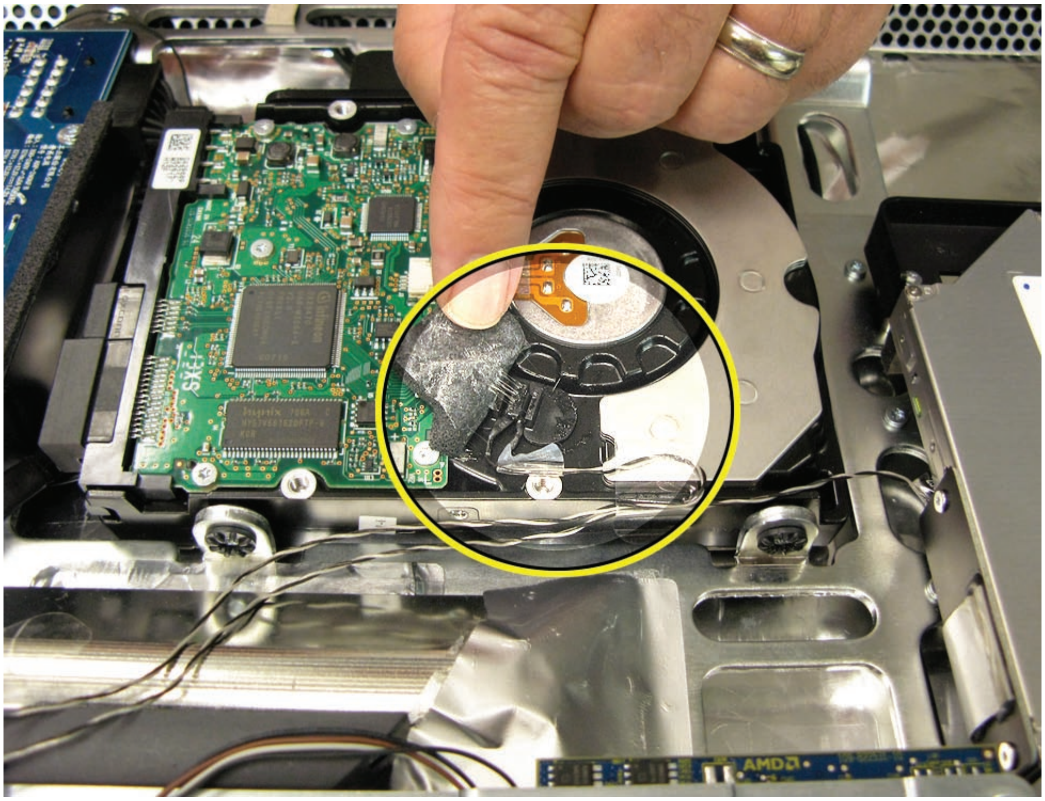
1. If you are installing a new hard drive, transfer the screws, clip, and temperature sensor/cable to the replacement drive.
2. Position the drive into the chassis lining up the two pins on the side of the hard drive with the two holes in the chassis.



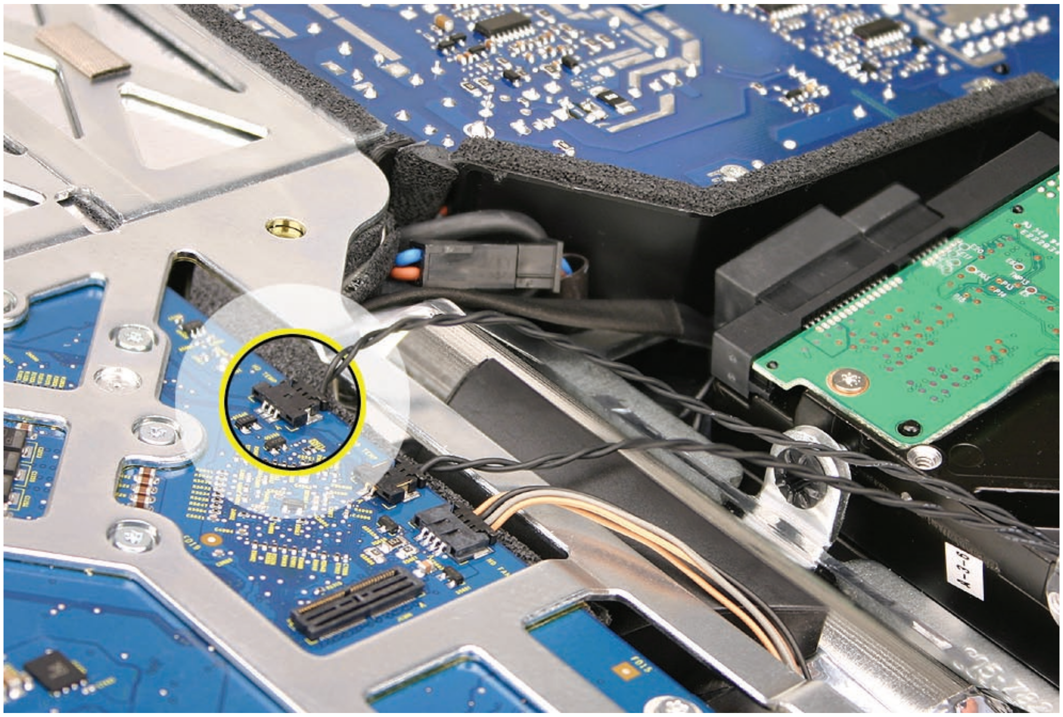
3. Connect the hard drive data and power cables to the hard drive.



4. Press the hard drive the rest of the way into the rear housing. You will hear a snap when the black plastic clip at the top hard drive clicks into place on the chassis.
5. If the sensor was removed from the top of the hard drive, peel back the foam gasket, slide the temperature sensor into the sensor holder, and cover the sensor with the foam gasket.



6. Connect the other end of the temperature sensor cable to the logic board.



7. Replace the display panel.
8. Replace the front bezel.
9. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
10. Replace the access door.

Hard Drive Sensor Cable

Tools

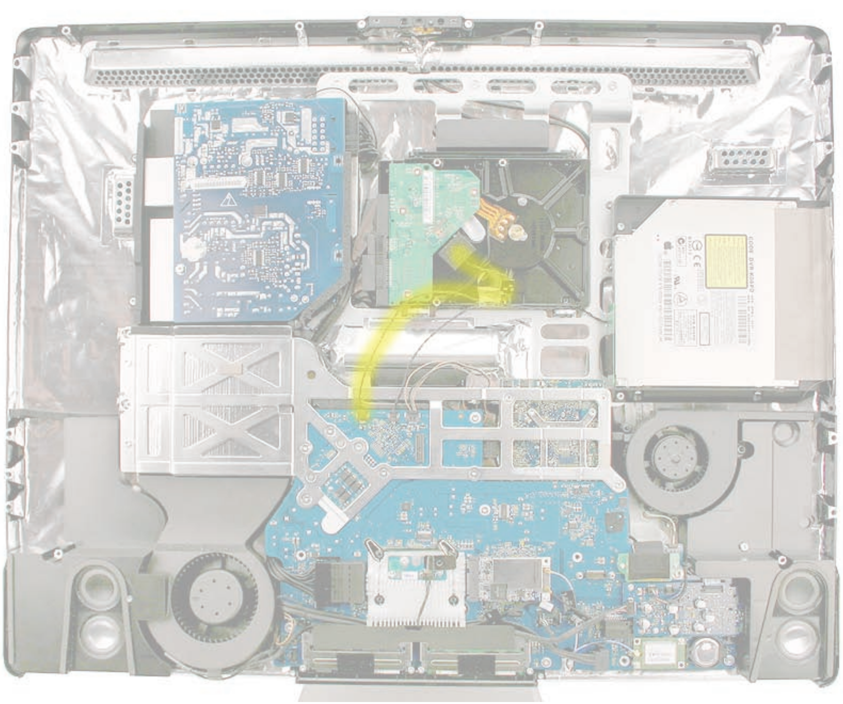
No tools are required for this procedure.

Preliminary Steps

Before you begin, remove the following:

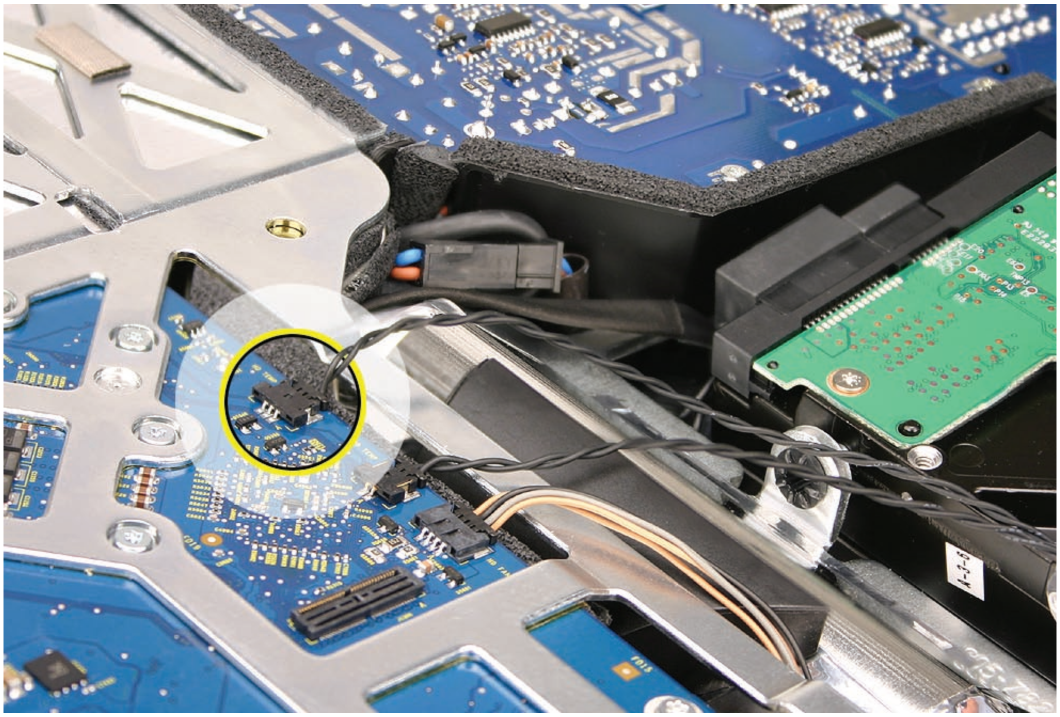
- Access door
- Glass panel
- Front bezel
- LCD Panel

Part Location

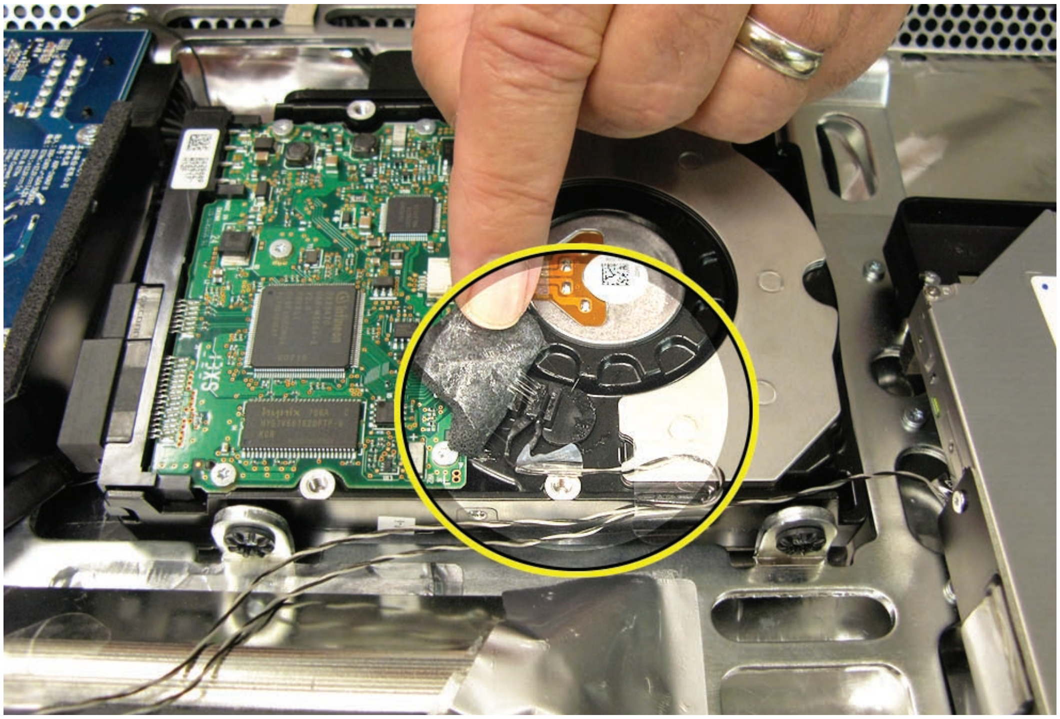


Removing the Hard Drive Sensor Cable

1. Disconnect the temperature sensor cable from its connector on the top of the logic board.

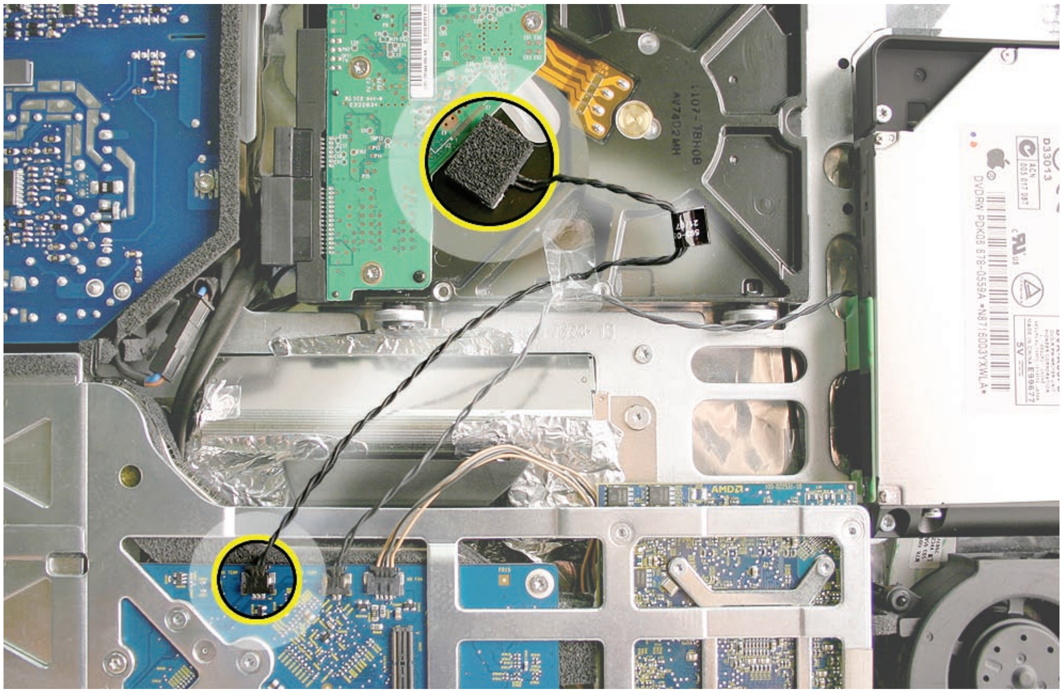


2. Remove the sensor cable from the sensor clip under the foam gasket on top of the hard drive



Replacing the Hard Drive Sensor Cable

1. Connect the sensor cable to the hard drive and the logic board.



2. Replace the display panel.
3. Replace the front bezel.
4. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
5. Replace the access door.

Optical Drive

Tools

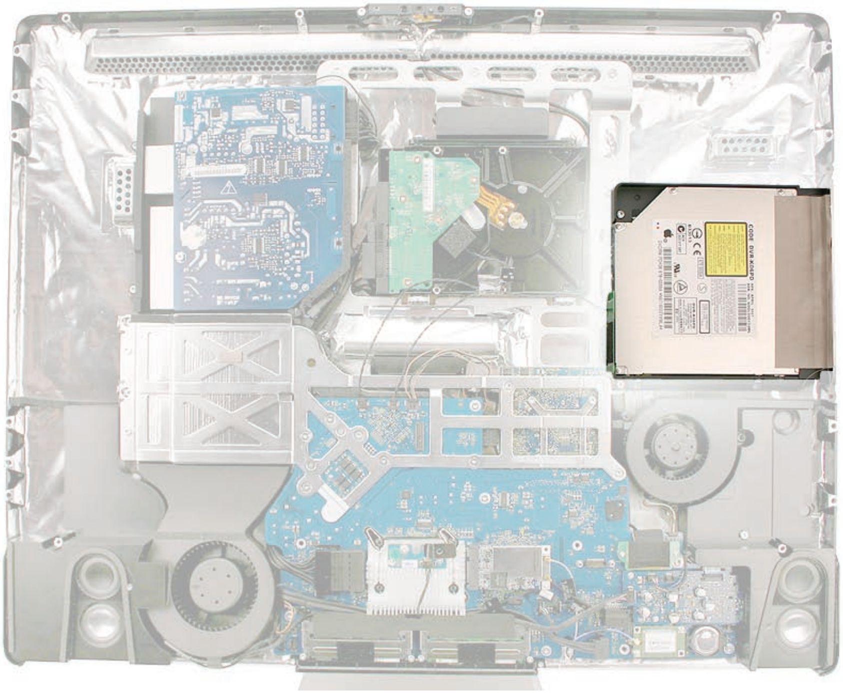
- Torx T8 screwdriver
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel
- LCD Panel

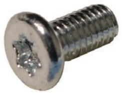
Part Location

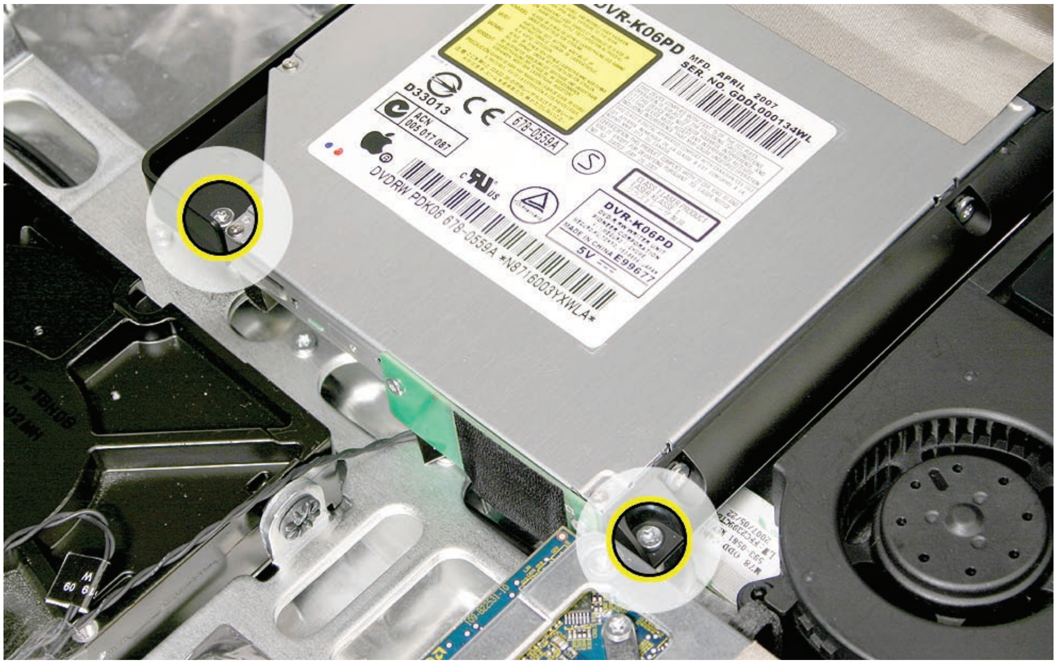


Removing the Optical Drive

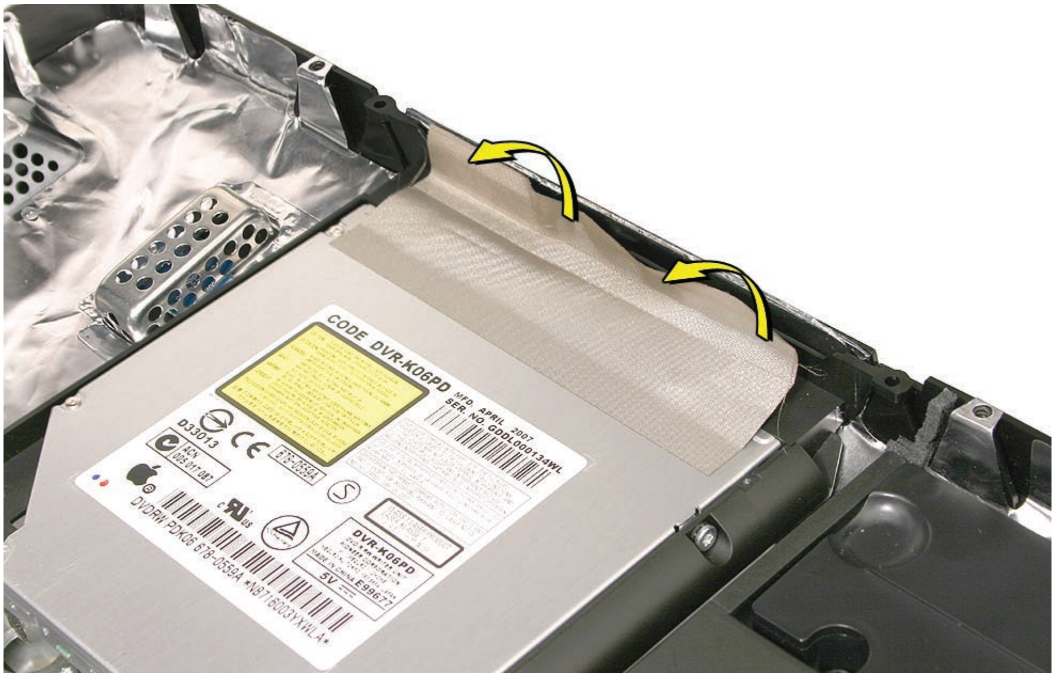
Warning: When servicing the optical drive, handle it by the edges only. Pressing elsewhere on the drive could damage its internal mechanism.

1. Note the sensor cable routing under the optical flex cable board. Remove the two T8 screws.

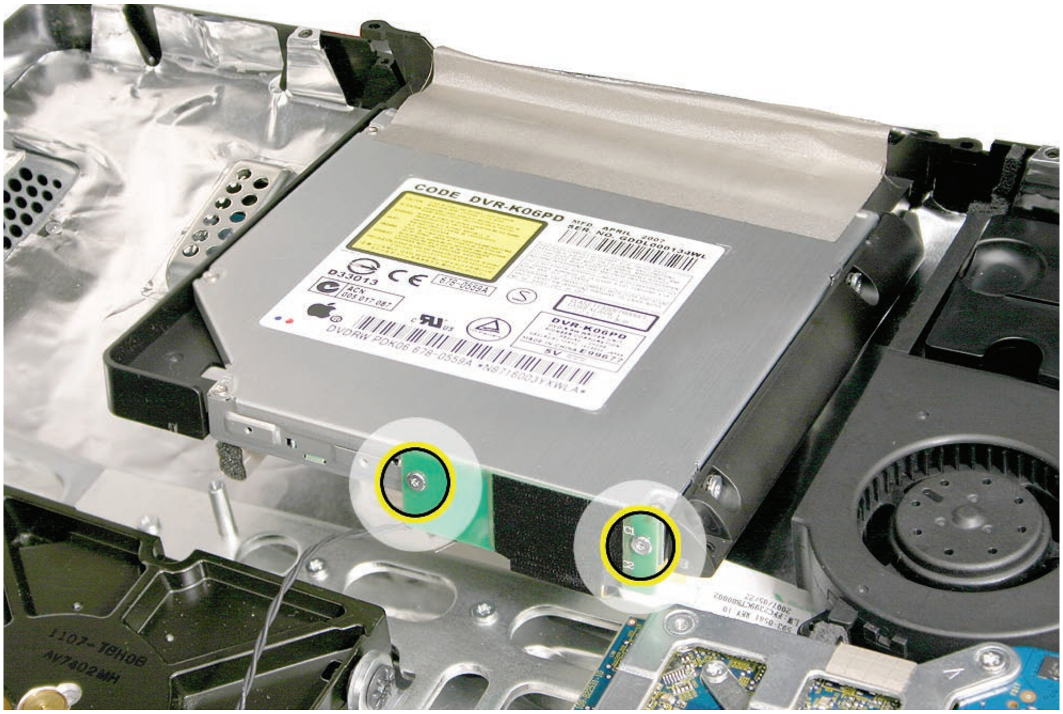




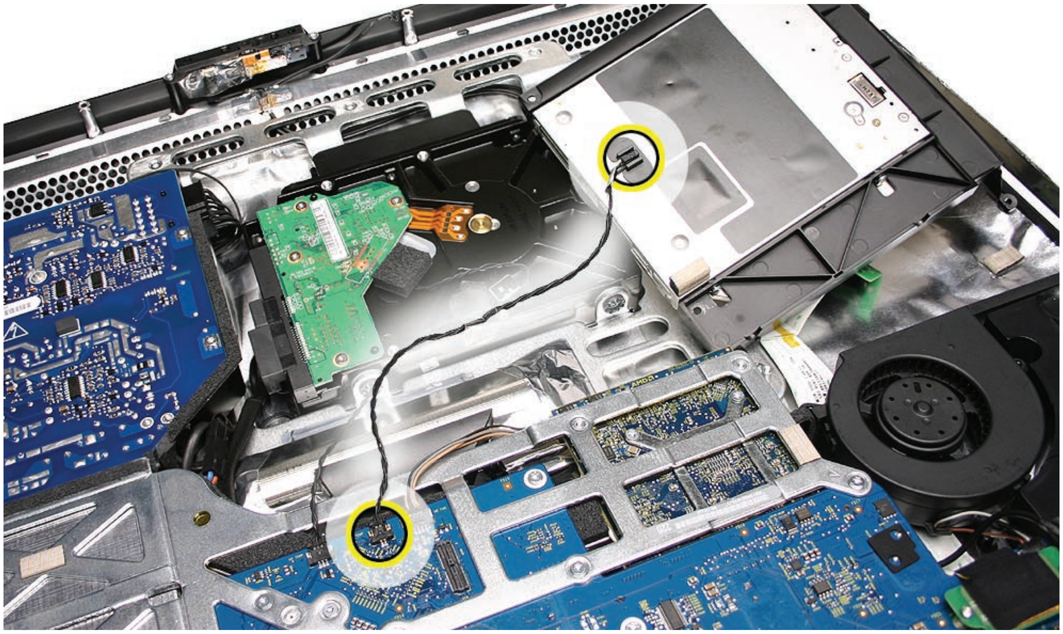
2. Carefully peel back the strip of EMI mesh tape that anchors the bezel end of the drive to the rear cover.



3. Tilt up the optical drive, remove the two T6 screws on the flex cable board. Remove the flex cable board from the optical drive.



4. Disconnect the temperature sensor cable from its connector on the logic board. On the bottom of the optical drive, peel back the foam gasket (not shown) and disconnect the sensor from the sensor clip.

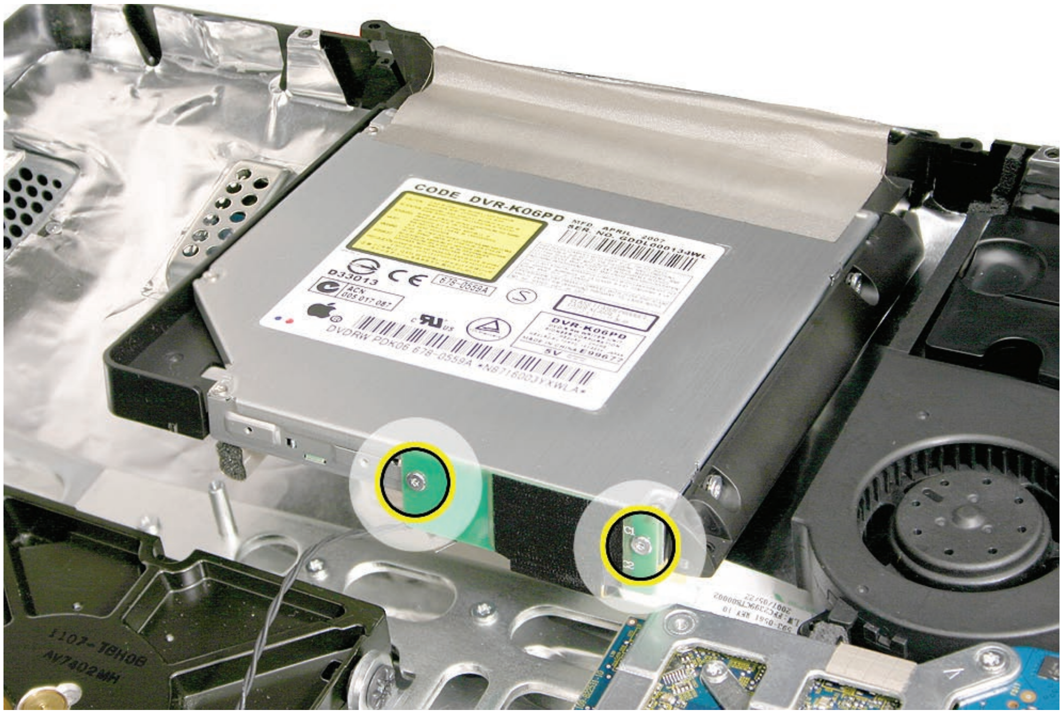


5. If you are replacing the optical drive, transfer the flex cable to the replacement drive. The replacement drive includes the plastic mounting brackets, sensor cable clip, slot-load bezel, and gaskets.

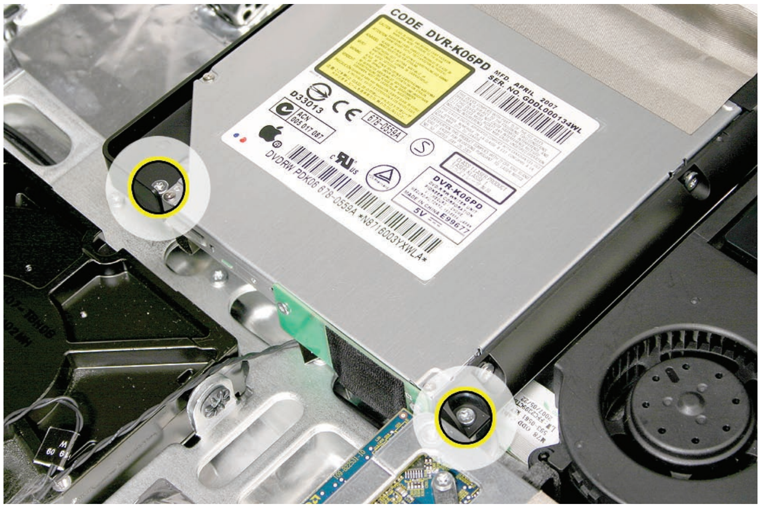
Replacing the Optical Drive

Caution: Never press down on or grasp the body of the optical drive when installing it. Pressing or squeezing the body of the optical drive could damage the drive mechanism.

1. Connect the optical sensor cable to the underside of the drive. Place the foam on top of the sensor clip.
2. Install the flex cable onto the optical drive with two T6 screws.

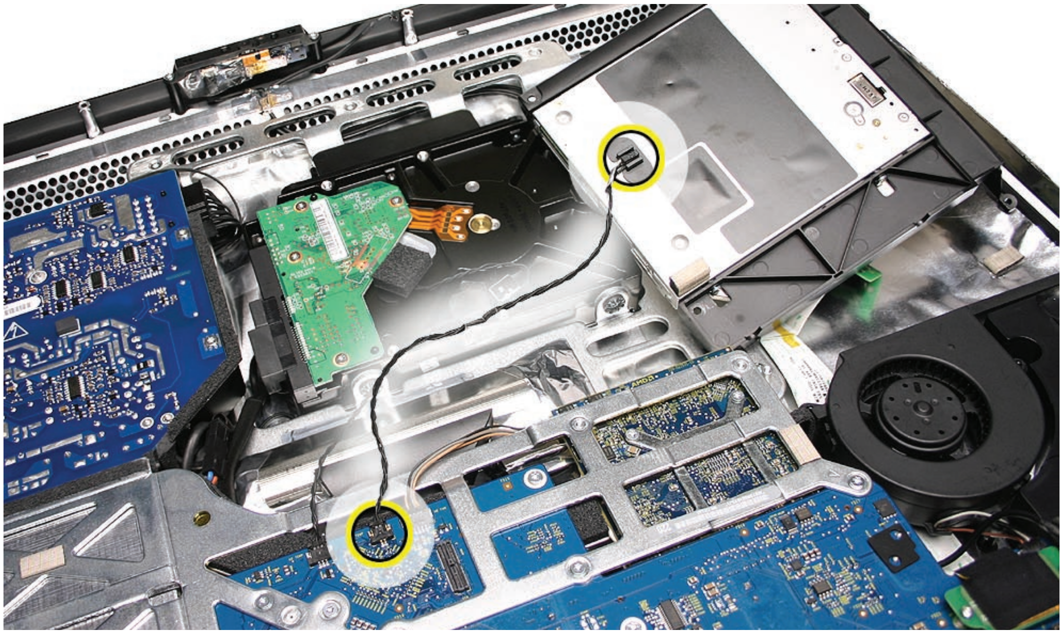


3. Insert the optical drive bezel into the rear housing, lining up the bezel with the slot opening.
4. Replace the two T8 optical drive screws.



5. Replace the EMI mesh tape. **Important:** Make sure the EMI mesh tape does not cover any of the slot-load opening on the rear cover as you replace the optical drive into the computer assembly.

6. Connect the optical sensor cable to the logic board.



7. Replace the display panel.

8. Replace the front bezel.

9. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.

10. Replace the access door.

Optical Flex Cable

Tools

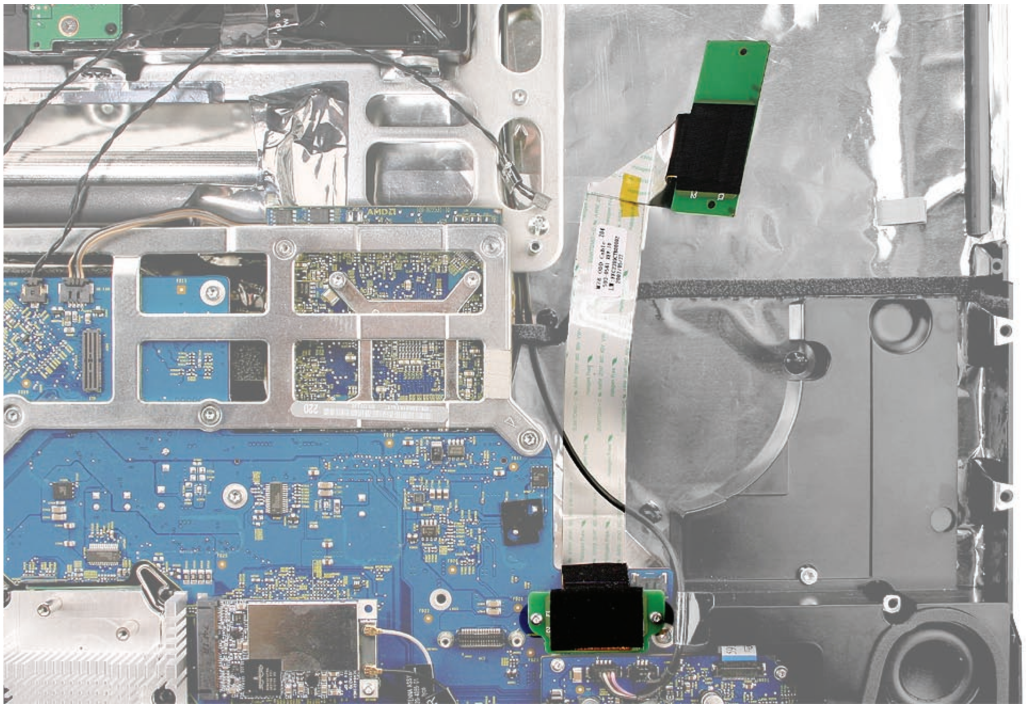
- T6 torx screwdriver

Preliminary Steps

Before you begin, remove the following:

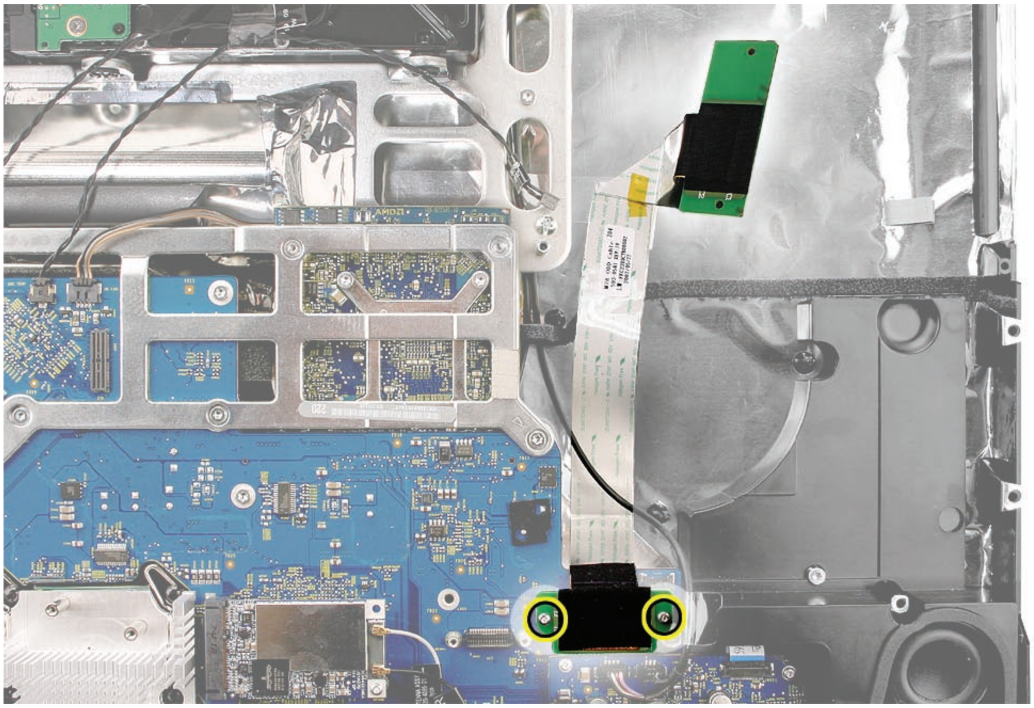
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Optical drive
- Optical fan

Part Location



Removing the Optical Flex Cable

1. Remove the two T6 screws from the cable attached to the logic board, to the left of the optical fan.



2. Lift the flexible cable out of the rear housing.

Replacing the Optical Flex Cable

1. Position the cable into the rear housing.
2. Replace the two T6 screws that secure the optical flex cable to the logic board.
3. **Replace the optical fan.**
4. **Replace the optical drive.**
5. Replace the T6 screws on the optical flexible cable.
6. **Replace the display panel.**
7. **Replace the front bezel.**
8. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
9. **Replace the access door.**

Optical Sensor Cable

Tools

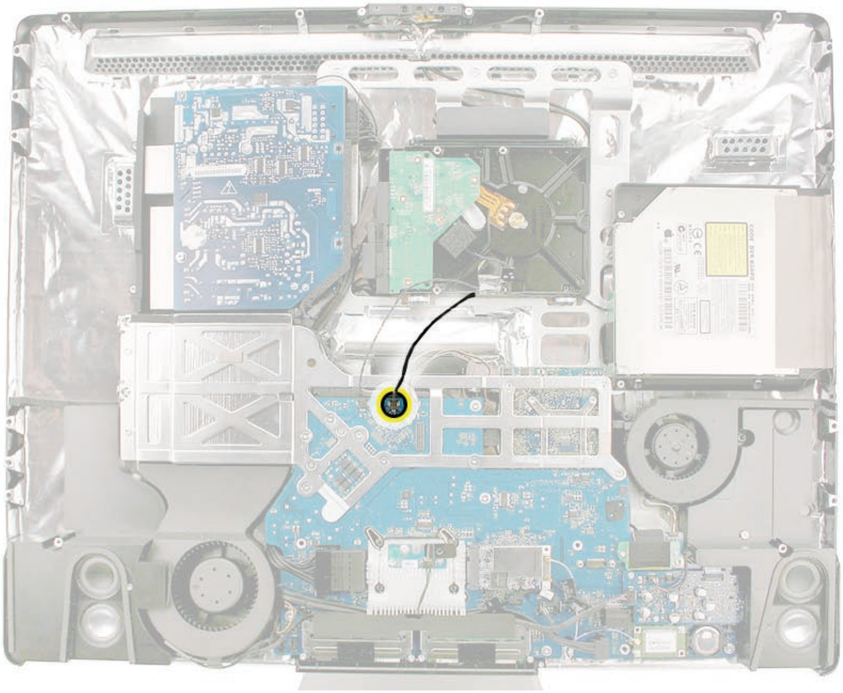
- Torx T8 screwdriver

Preliminary Steps

Before you begin, remove the following:

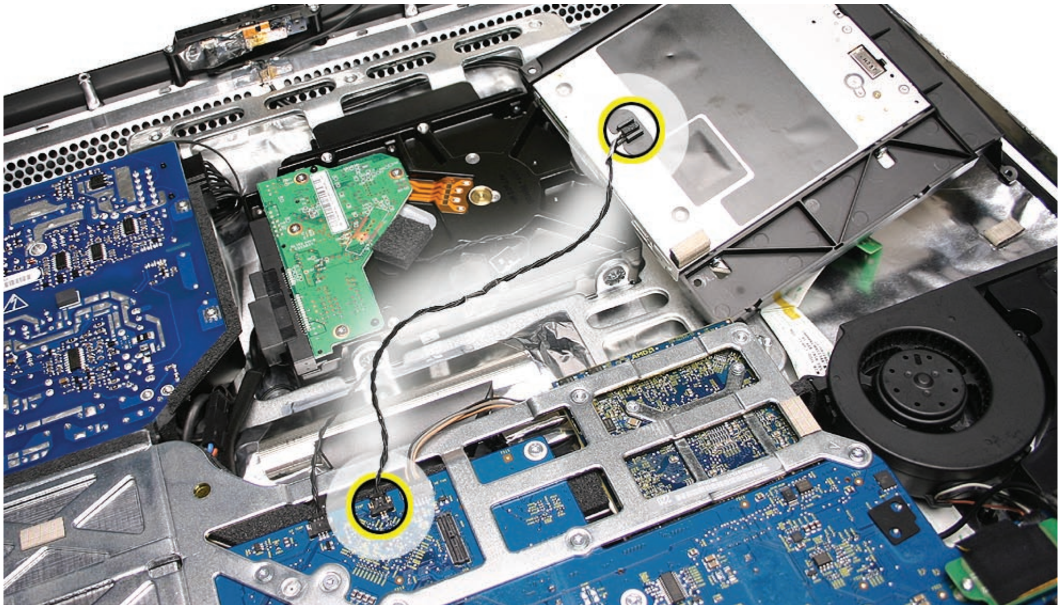
- Access door
- Glass panel
- Front bezel
- LCD display panel
- Optical drive

Part Location



Removing the Optical Sensor Cable

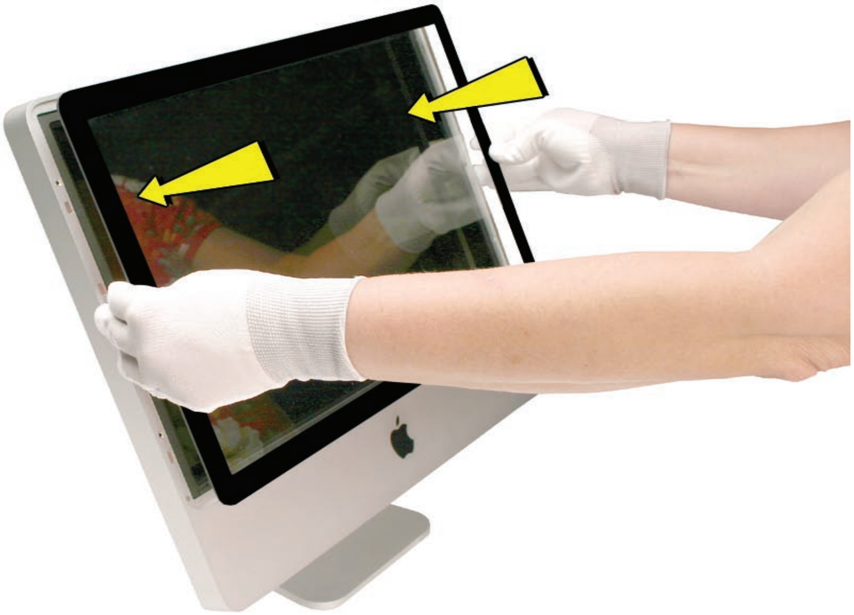
Disconnect the temperature sensor cable from the connector on the logic board and from the cable clip on the underside of the optical drive.



Replacing the Optical Sensor Cable

Caution: Never press down on or grasp the body of the optical drive when installing it. Pressing or squeezing the body of the optical drive could damage the drive mechanism.

1. Connect the optical sensor cable to the underside of the drive. Place the foam gasket on top of the sensor cable clip.
2. Replace the optical drive.
3. Replace the display panel.
4. Replace the front bezel.
5. Roll the sticky silicon roller over the LCD panel to remove any particles.
6. Clean the silicon roller on the sticky paper by rolling the roller back and forth on the sticky paper.
7. Remove the glass panel from the microfoam bag. Place the glass panel on the microfoam bag with the inside of the glass facing up. Clean the INSIDE of the glass panel with the silicon roller. **Note**: **The glass panel is delicate and will break if too much pressure is applied.**
8. Holding the glass by the sides, carefully line up the metal pins on the glass bezel with the camera hole at the top of the bezel and the IR hole at the bottom of the bezel. Gently lower the glass panel onto the bezel. The magnets on the front bezel will grab the glass panel and hold it in place.



9. Clean the outside of the glass panel with a clean microfiber cleaning cloth. If necessary, use a small amount of iKlear polish on the outside of the glass panel. Wipe the glass until the solution completely disappears and there is no longer any residue or haze .
10. Replace the access door.

Logic Board

Tools

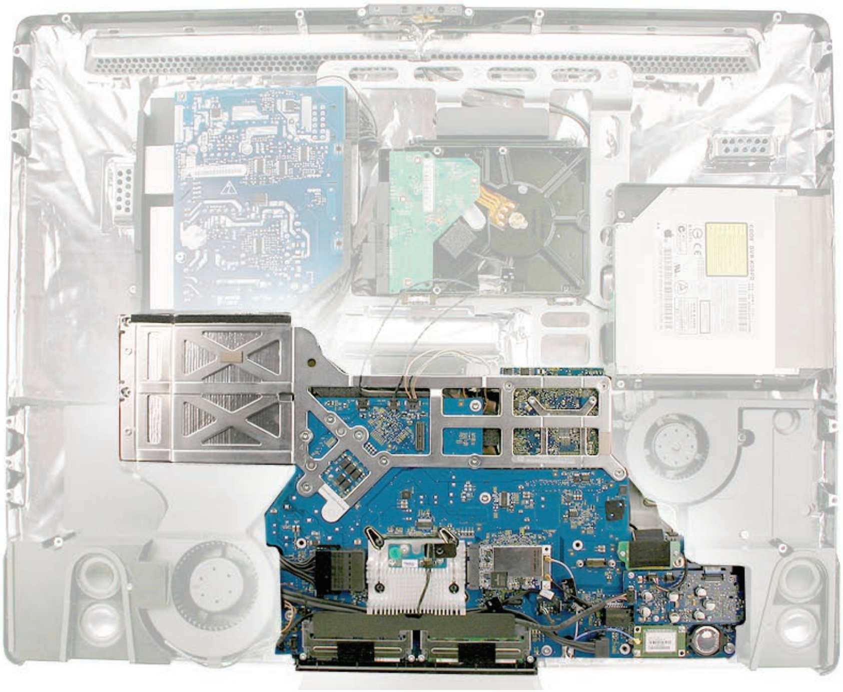
- Torx T8 screwdriver
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

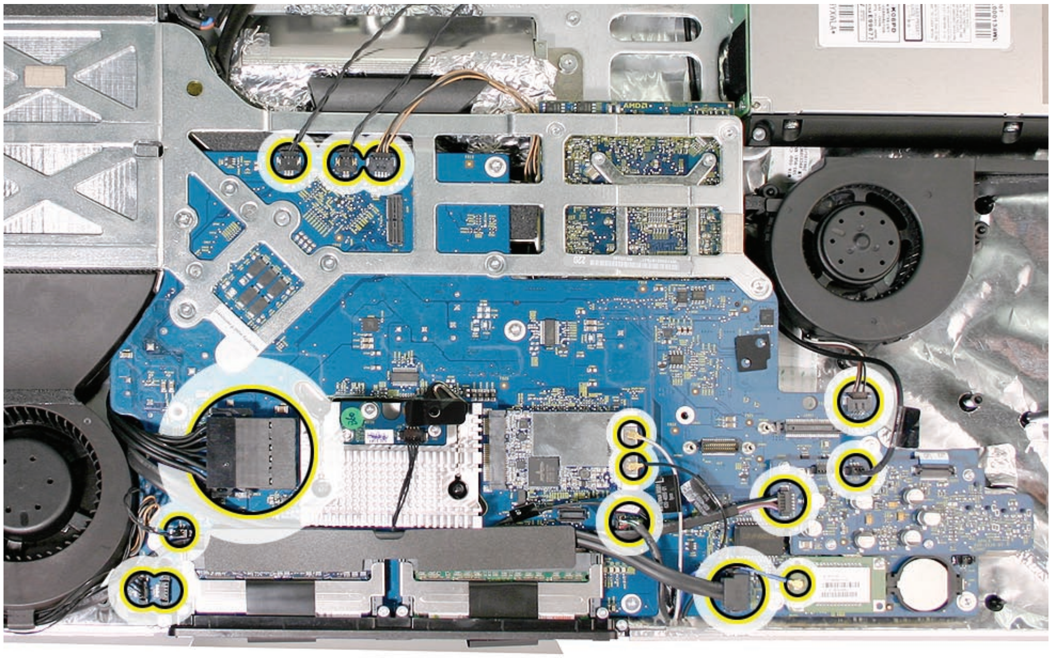
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right

Part Location

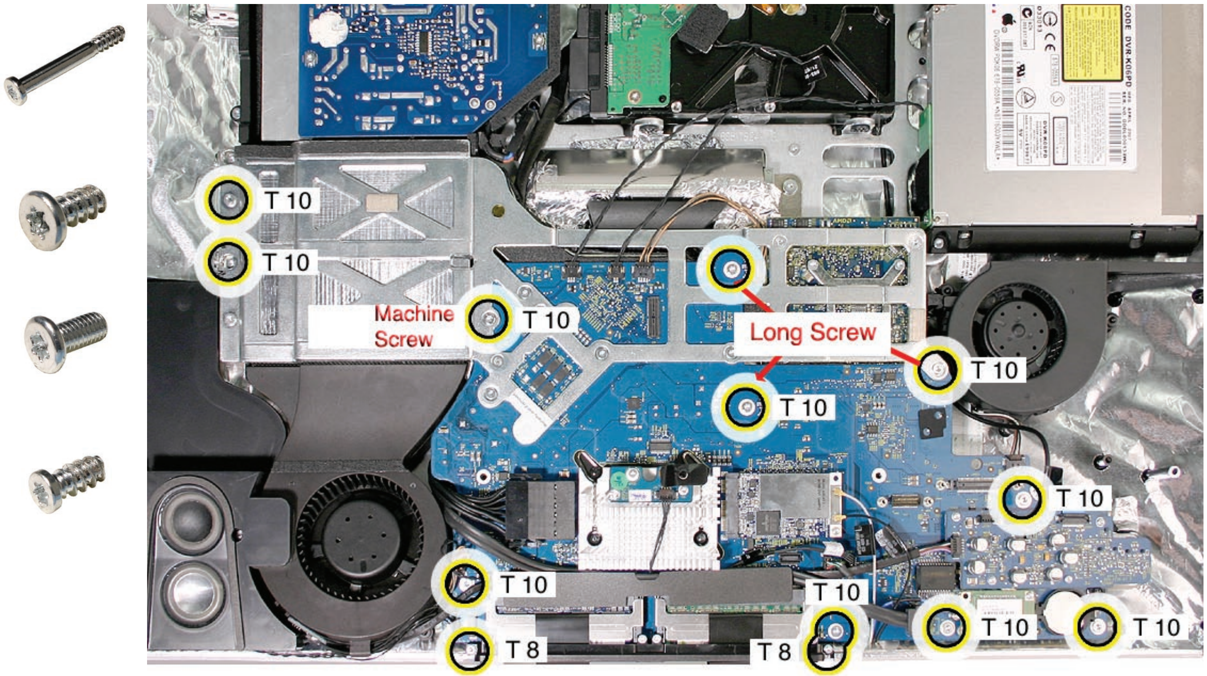


Removing the Logic Board

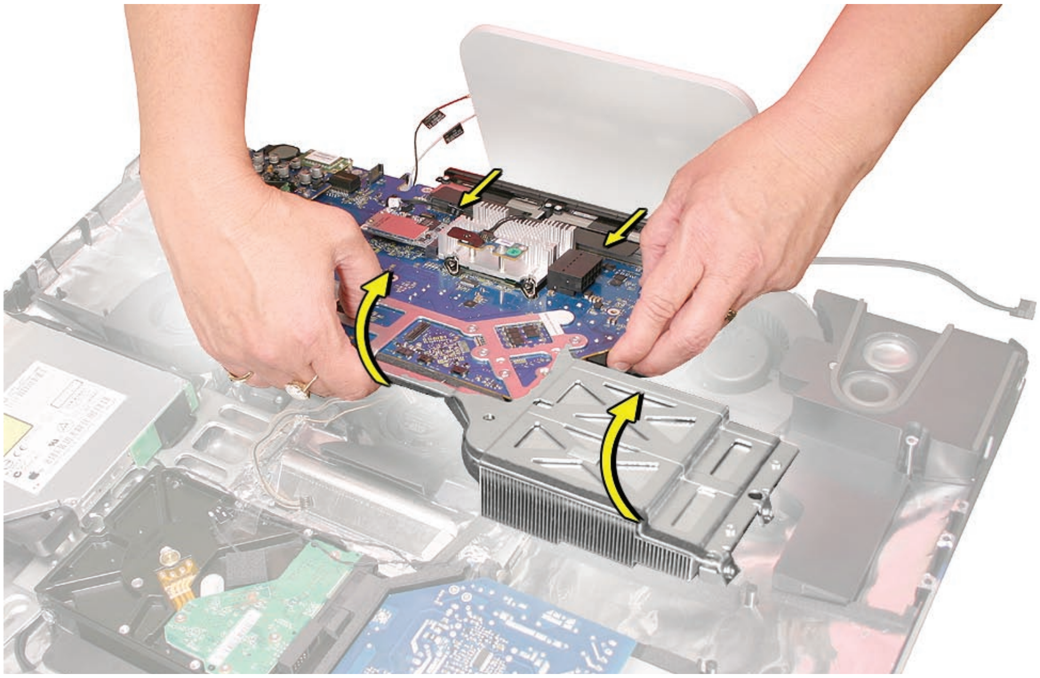
1. Disconnect all circled connectors from the logic board.



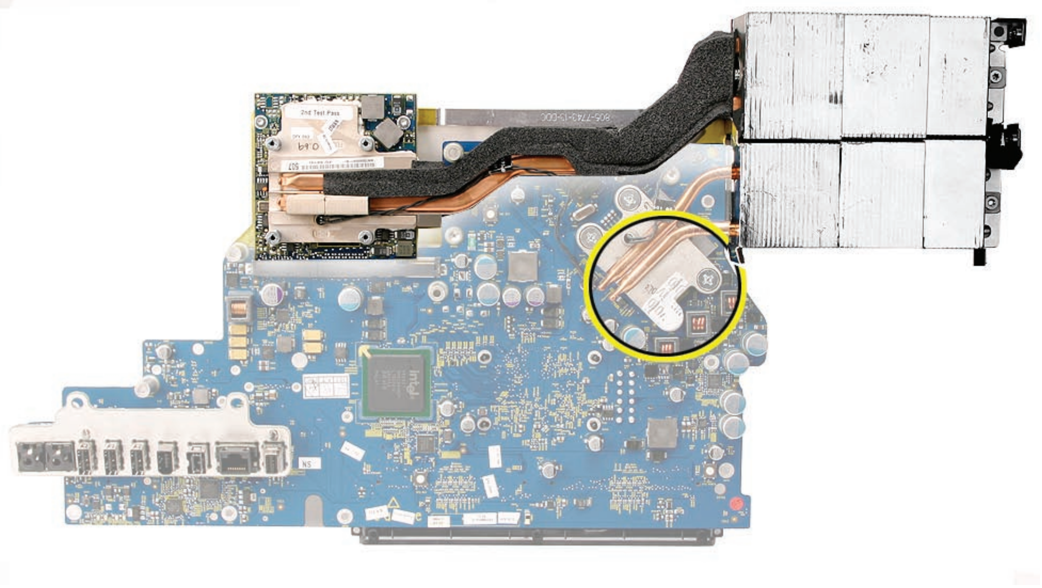
2. Remove the thirteenT10 screws from the logic board. Note that the machine screw location has an arrow designation stamped onto the metal backer plate.


T 10
T 10
Machine Screw
T 10
Long Screw
T 10
T 10
T 10
T 10
T 10
T 10
T 10
T 8
T 8

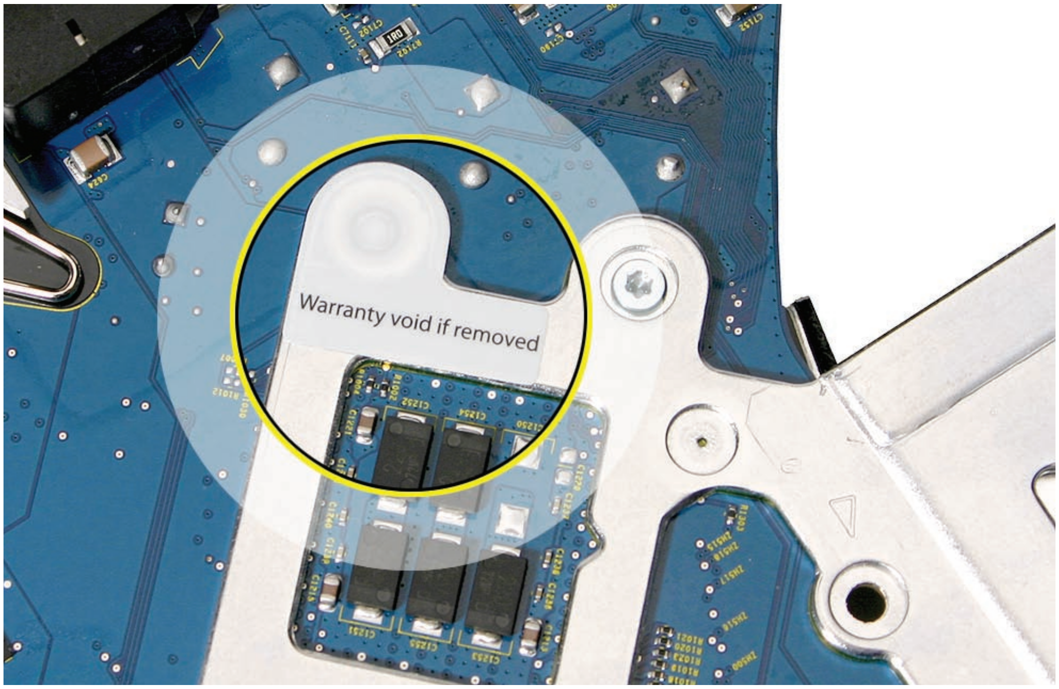
3. Lift the logic board up and out of the rear housing.
4. **Important**: When handling the logic board, never handle the board by the heatsink or metal frame.



5. **Important**: Verify that the tamper indicator labels on the front and back side of the CPU heat sink assembly are intact. If the tamper labels have been removed or tampered with, the logic board is not eligible for exchange.



6. This shows the tamper-proof label on the top side of the logic board.

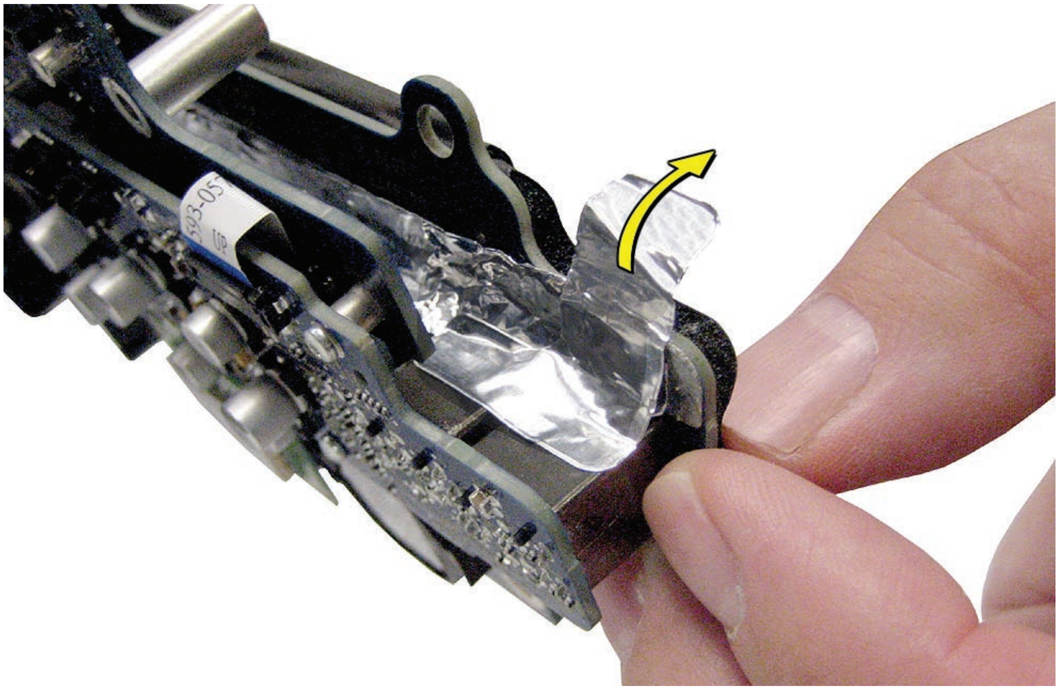


7. Remove the following items from the logic board before returning it to Apple:

- Video card
- Audio board
- AirPort card
- IR board and cable
- Bluetooth board
- Memory DIMMs

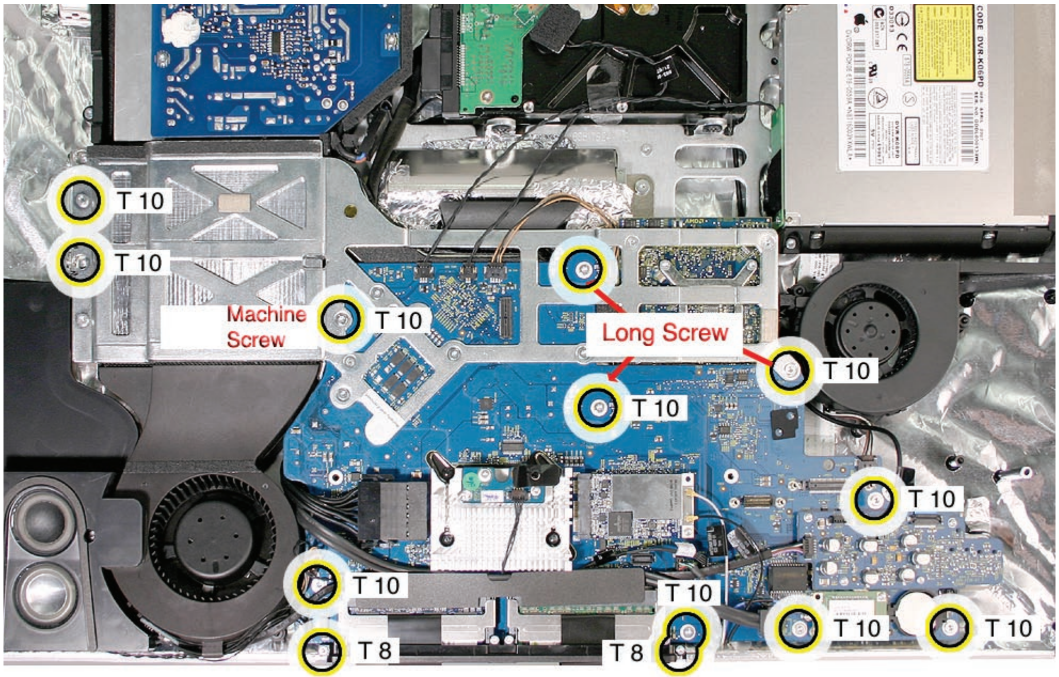
Replacing the Logic Board

1. If you removed the logic board to access another module, reinstall the board as is. However, if you are replacing the logic board with a new one, notice that a replacement logic board does not include the video card, memory, audio board, AirPort Extreme card, Bluetooth card, or IR components. Make sure these parts are transferred to the new logic board before closing up the computer.
2. **Note**: On all replacement logic boards a piece of EMI tape is included in the box with the logic board. Attach the EMI tape to the I/O port as shown. After the board is installed, attach the EMI tape to the rear housing, see step 5.

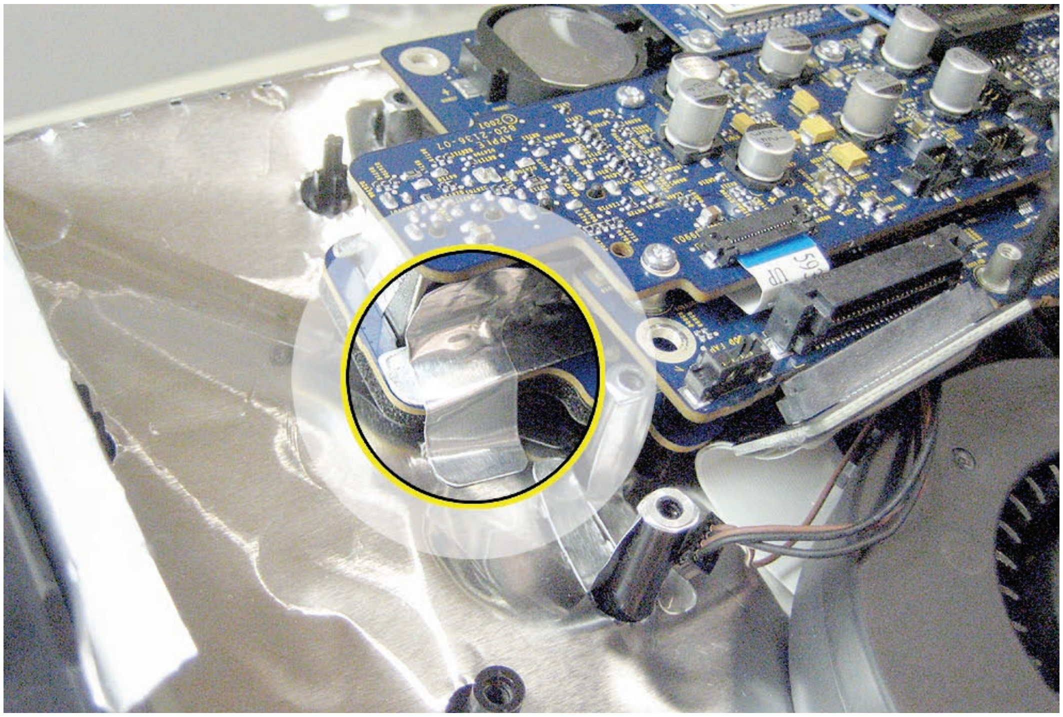


3. Position all the logic board cables out of the way so the logic board can be placed into the rear cover.

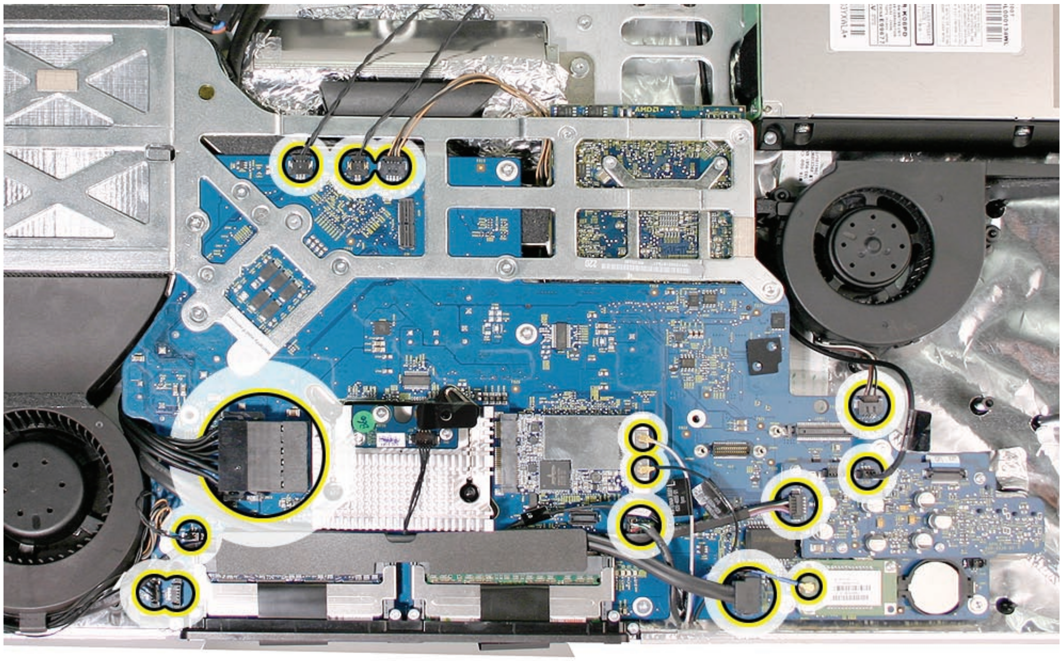
4. As you lower the board into the rear housing, it helps to line up the two T8 screw holes on the right and left side of the memory slot.


T 10
T 10
Machine Screw
T 10
Long Screw
T 10
T 10
T 10
T 10
T 10
T 10
T 10
T 8
T 8

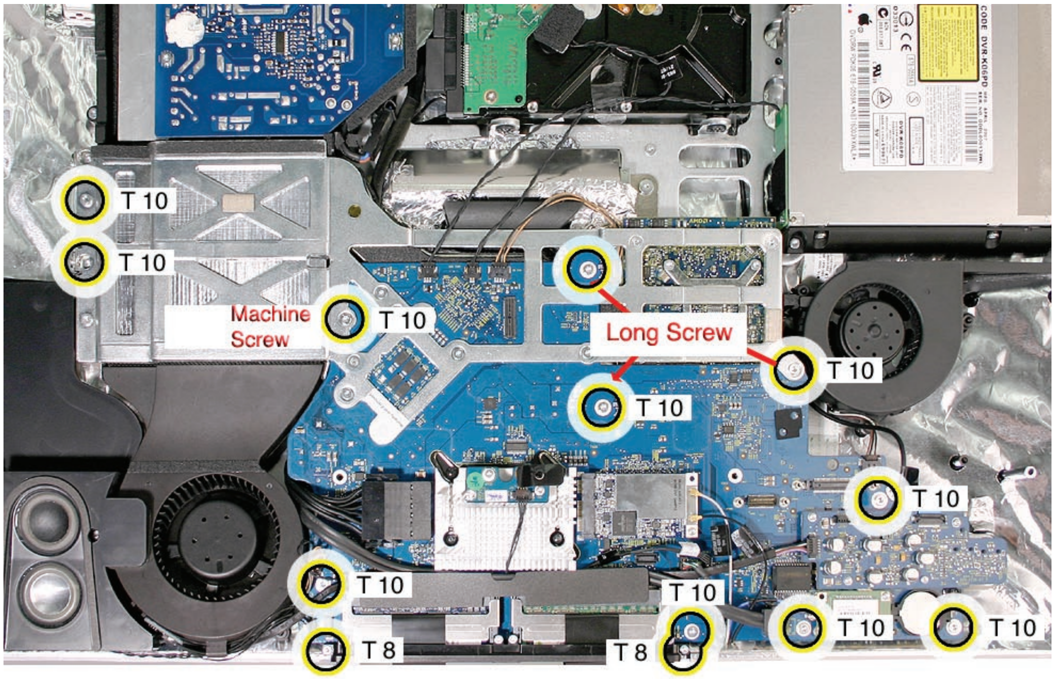
5. With the logic board in place, press the piece of EMI tape (on the I/O ports) onto the rear housing.



6. Connect the cables.



7. Replace the machine screw first; then replace the self-tapping screws.


T 10
T 10
Machine Screw
T 10
Long Screw
T 10
T 10
T 10
T 10
T 10
T 8
T 10
T 8
T 10
T 10

8. **Replace the display panel.**
9. **Replace the front bezel.**
10. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
11. **Replace the access door.**

Video Card

Tools

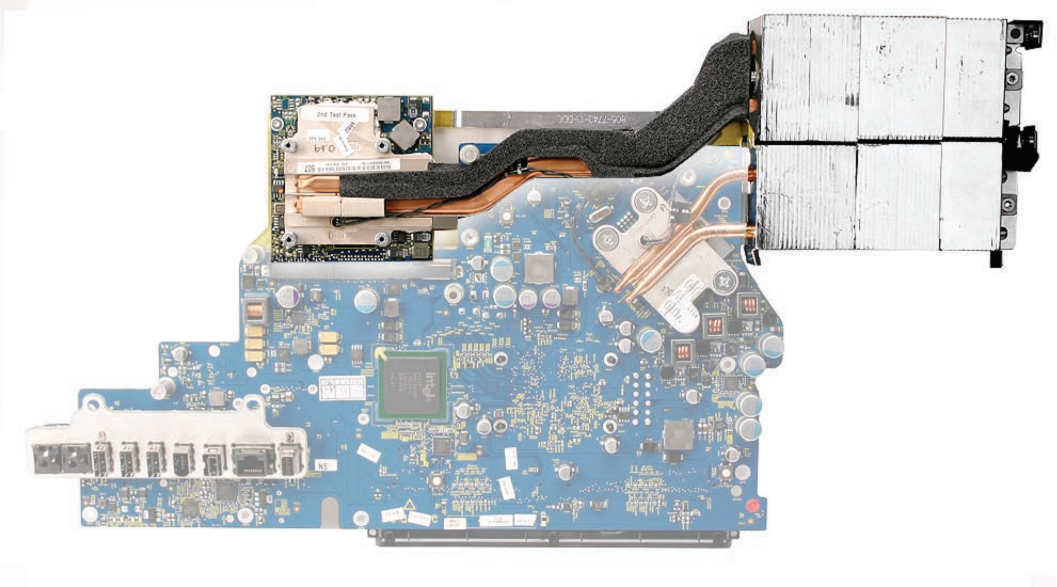
- Torx T8 screwdriver

Preliminary Steps

Before you begin, remove the following:

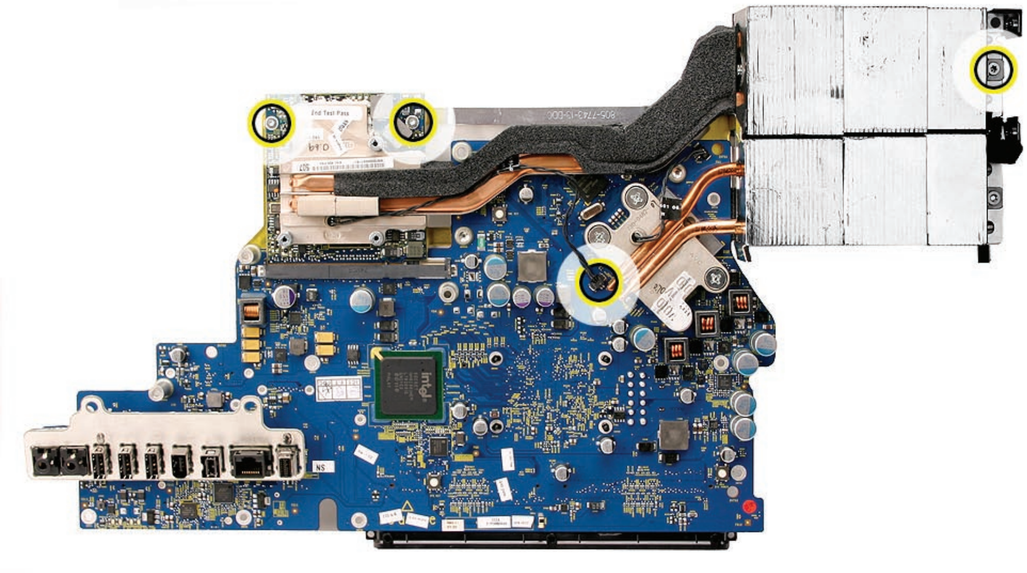
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Logic Board

Part Location

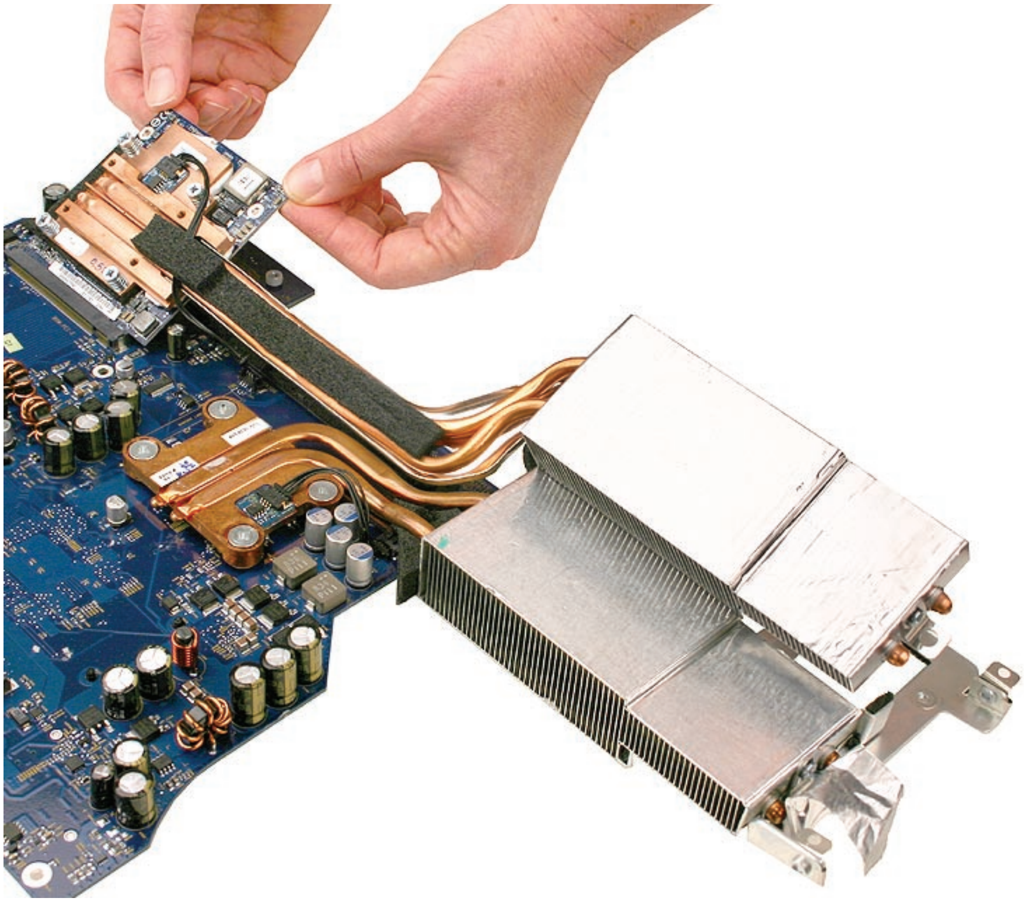


Removing the Video Card

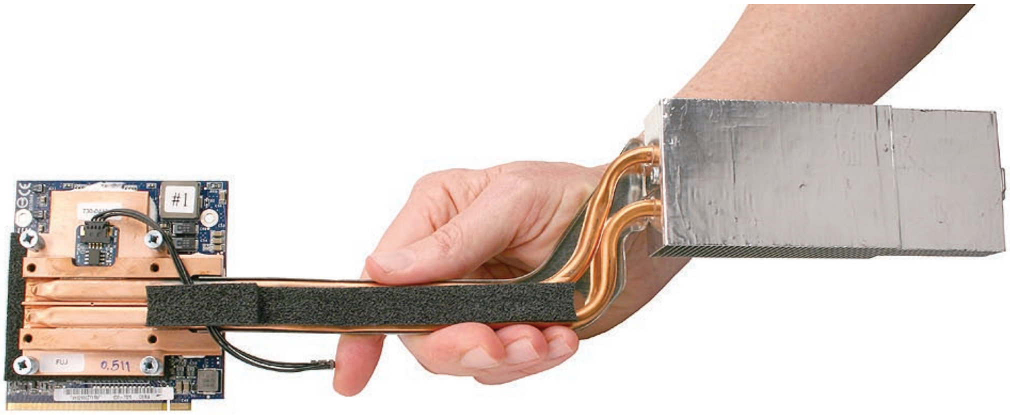
1. Remove the three screws and disconnect the cable from the logic board.



2. Tilt up the video card with attached heatsink, and disconnect it from the card connector on the logic board (as shown with the iMac (24-inch) video card.)

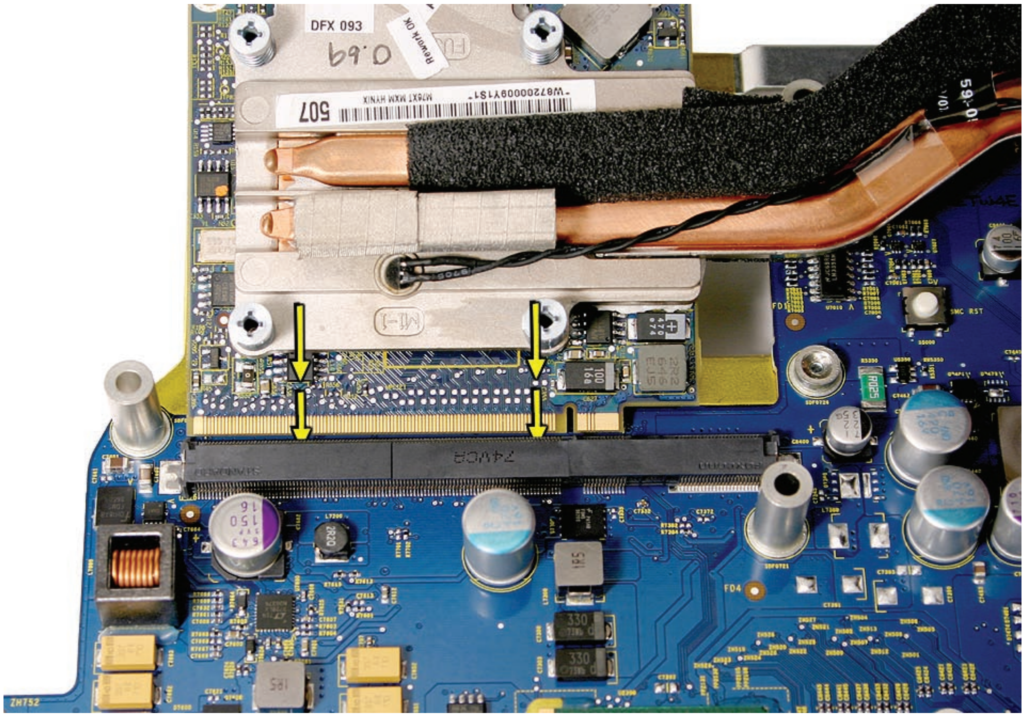


3. When handling the video card, hold it by the heat pipe brace as demonstrated on the iMac (24-inch) video card.

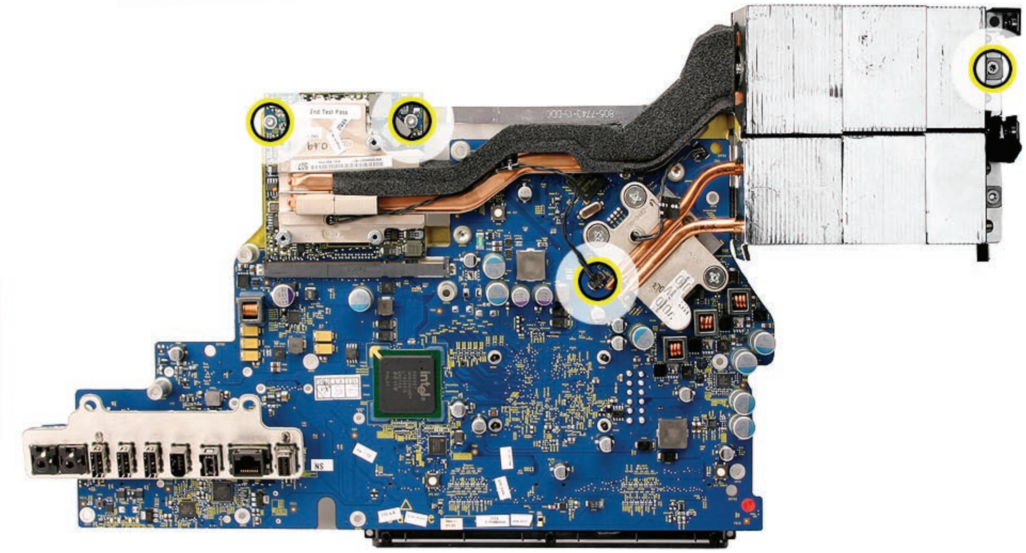


Replacing the Video Card

1. Connect the video card to the logic board, lining up the gold fingers on the card with the video card slot on the logic board.



2. Install the three screws and connect the sensor cable to the logic board. **Replacement Note**: The shorter screw attaches at the far right end of the video card heatsink.



3. [Replace the logic board.](#)

4. **Replace the right speaker.**
5. **Replace the display panel.**
6. **Replace the front bezel.**
7. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
8. **Replace the access door.**

Hard Drive Fan

Tools

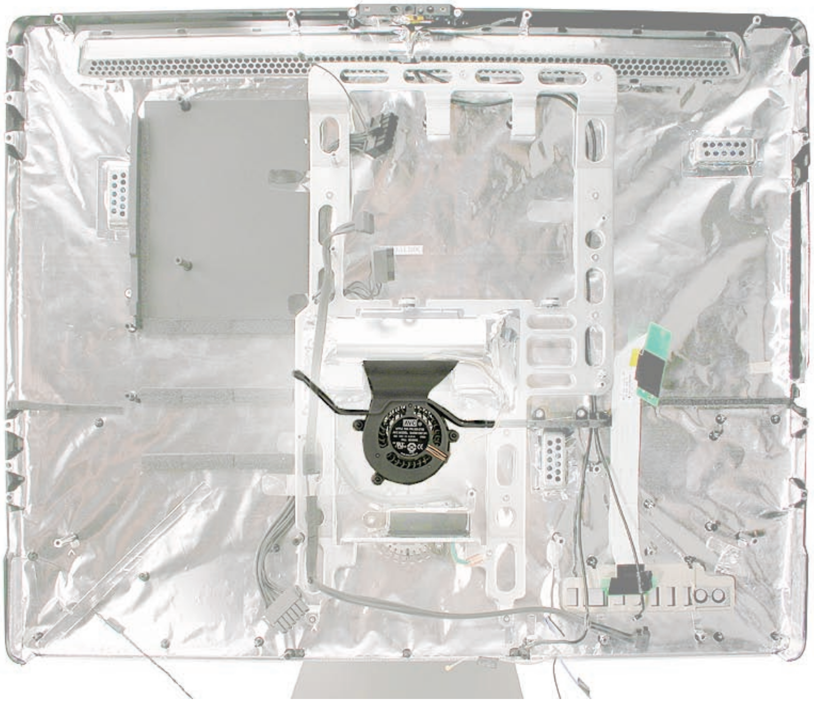
No tools are required to remove the hard drive fan.

Preliminary Steps

Before you begin, remove the following:

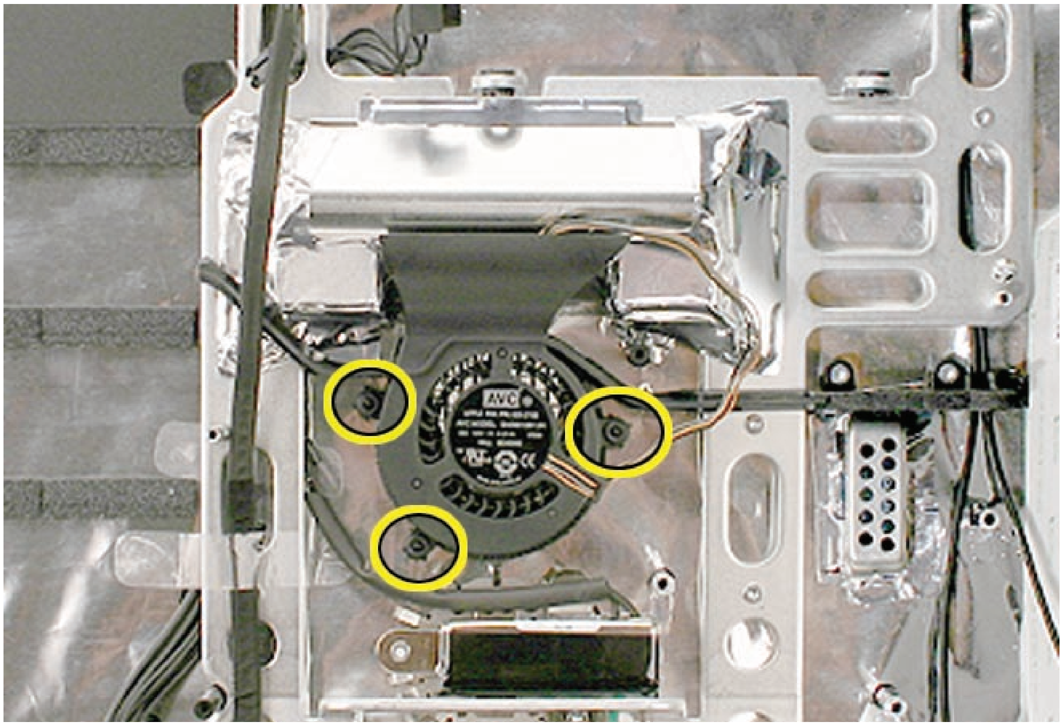
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Logic Board

Part Location



Removing the Hard Drive Fan

Once the logic board has been removed, the fan will already be disconnected. Lift the fan straight up and off of the three guide posts.



Replacing the Hard Drive Fan

1. Install the hard drive fan onto the guide posts.
2. Replace the logic board.
3. Replace the right speaker.
4. Replace the display panel.
5. Replace the front bezel.
6. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
7. Replace the access door.

AC Power Inlet

Tools

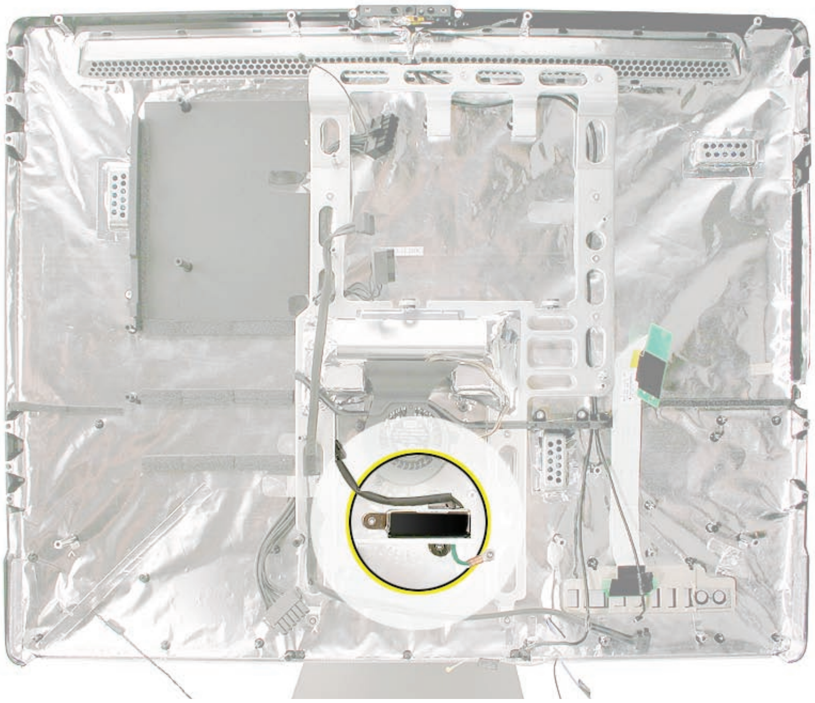
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

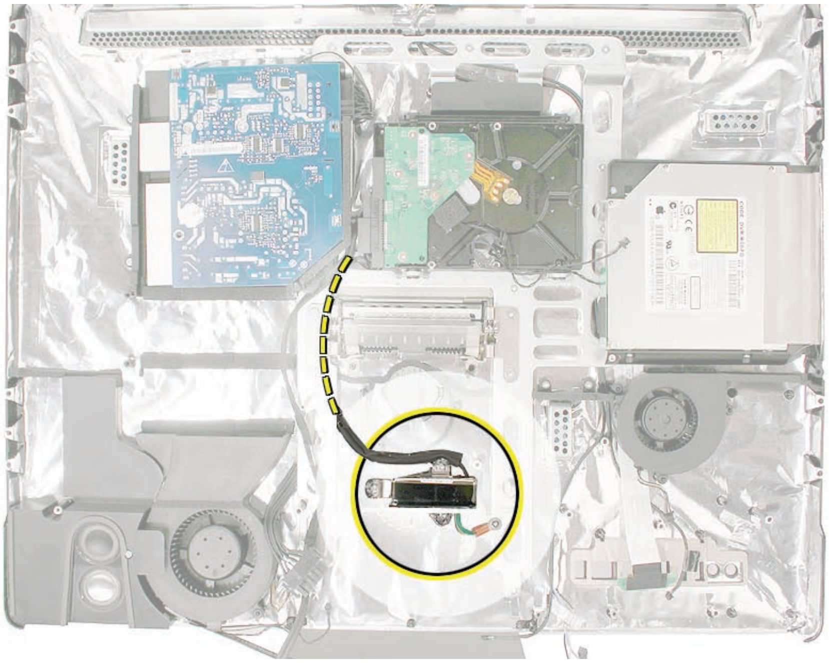
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Logic Board
- Power supply

Part Location



Removing the AC Power Inlet

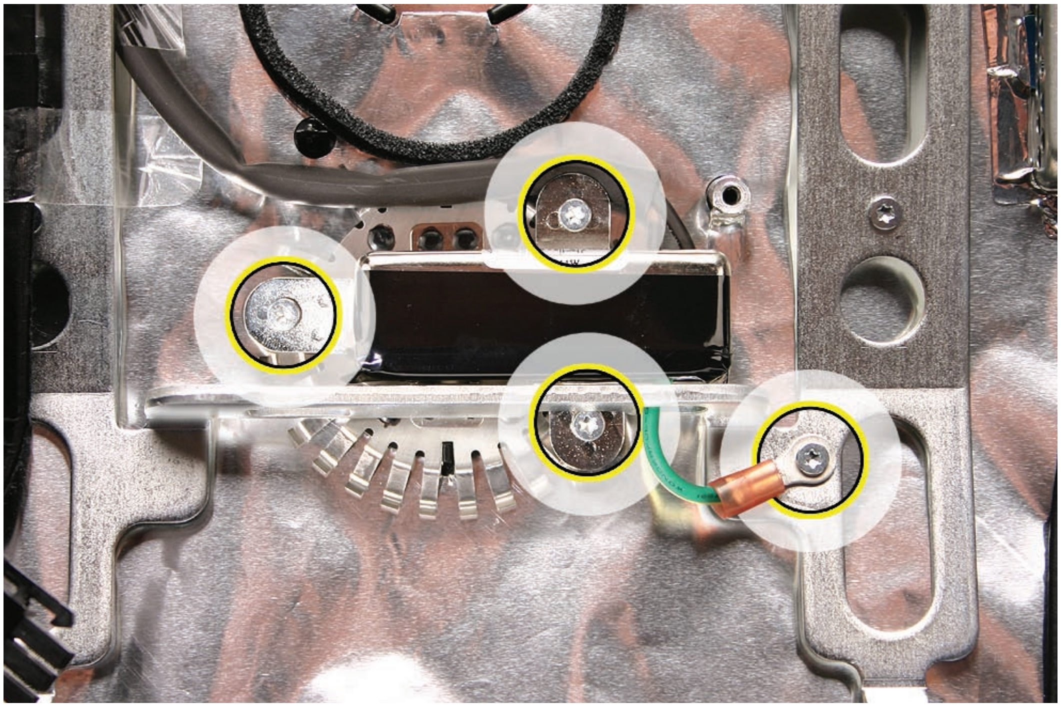
1. Note the cable routing between the chassis frame and the rear cover.



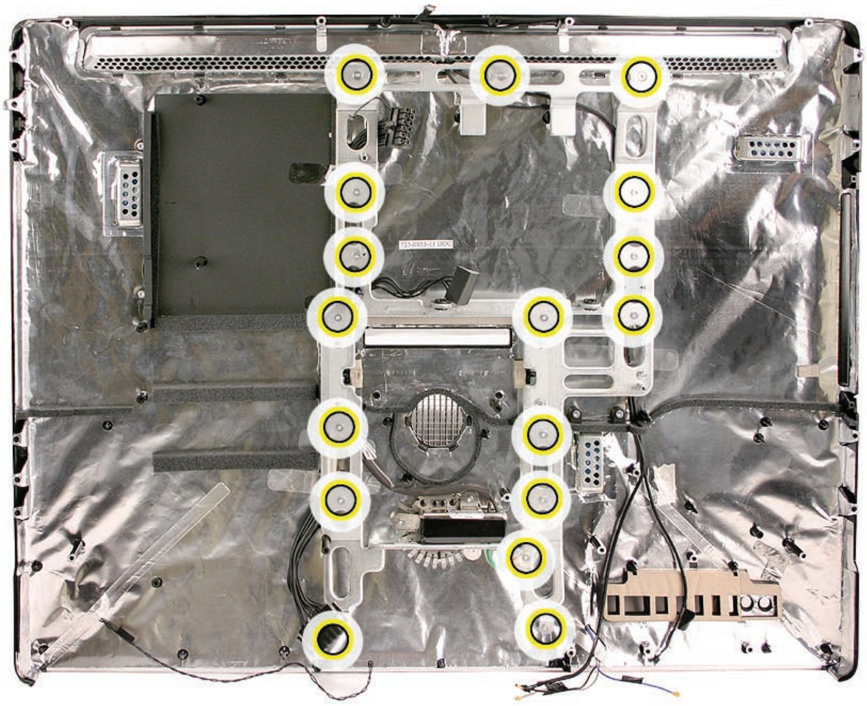
2. Using a torx T10 screwdriver, remove the three 7-5-mm long self-tapping screws from the power inlet and the 5-mm long machine screw from the ground cable . Remove any EMI tape on the metal case.

922-7069

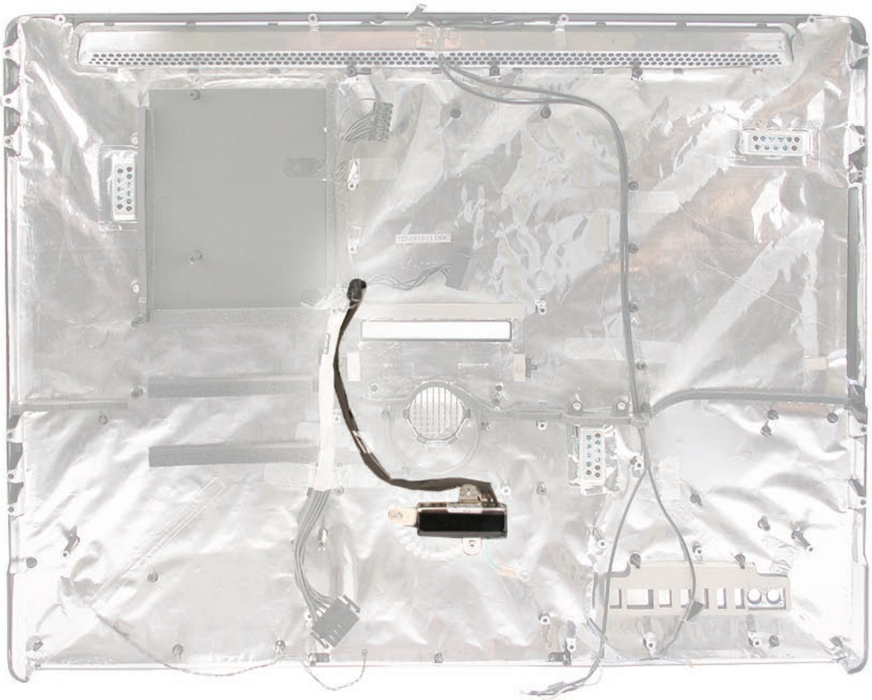
922-6800



3. Remove the chassis screws to release the AC power inlet from the chassis.



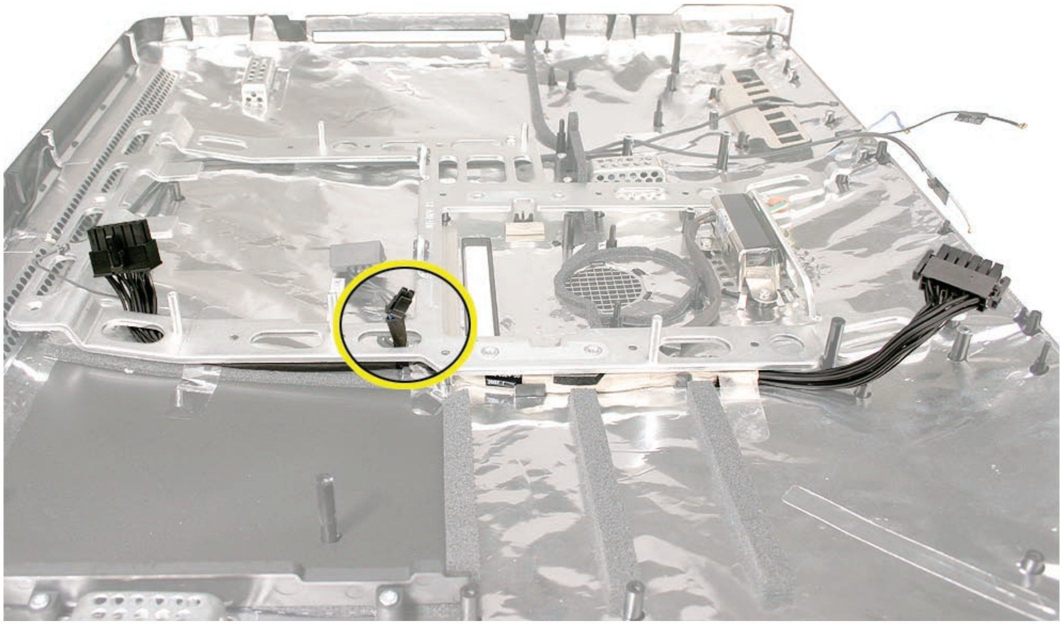
4. Remove the AC power inlet from the rear housing



Replacing the AC Power Inlet

1. Position the AC power inlet into the rear housing.

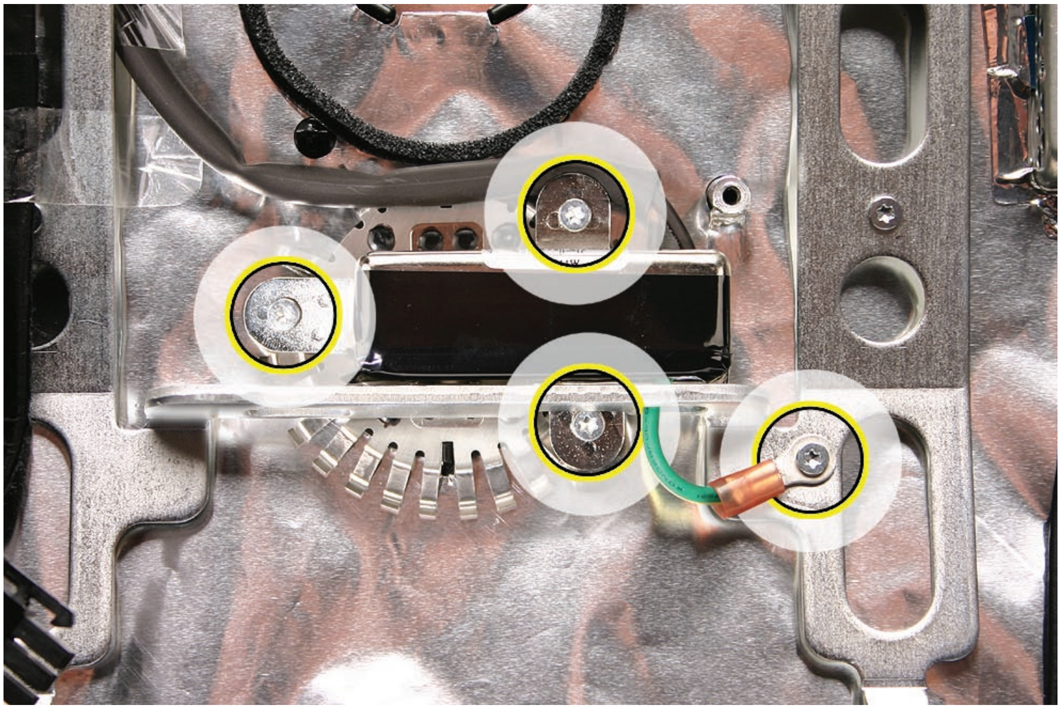
1. Route the AC power inlet cable under the chassis and up through the hole in the chassis.



2. Route the ground cable through the opening in the chassis. Replace the four AC inlet screws. Attach the ground cable to the chassis with the short machine screw.

922-7069

922-6800



3. Replace the power supply, and connect the AC power inlet cable.
4. Replace the logic board.
5. Replace the right speaker.
6. Replace the display panel.
7. Replace the front bezel.
8. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
9. Replace the access door.

Audio Board

Tools

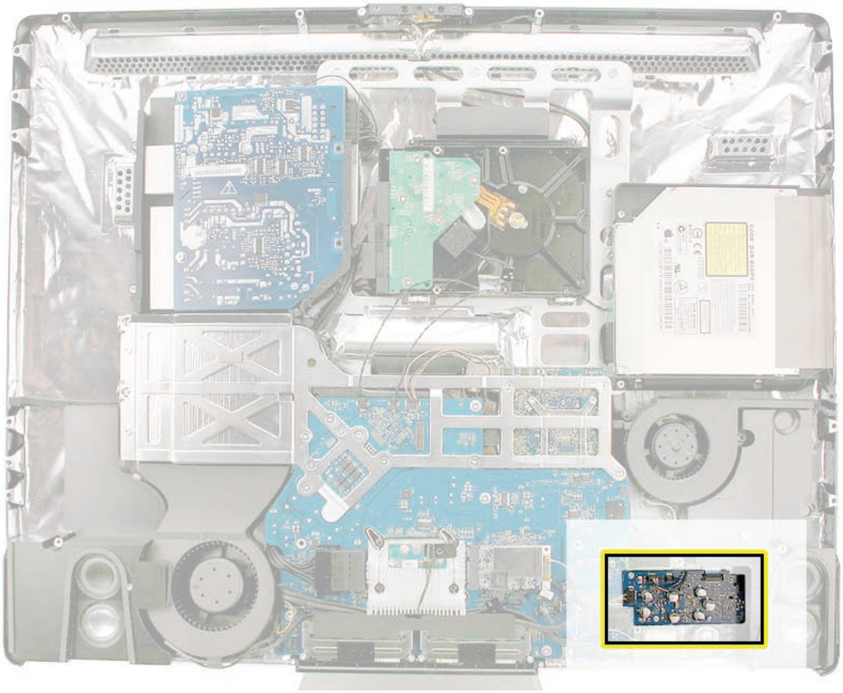
- Torx T6 screwdriver

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right

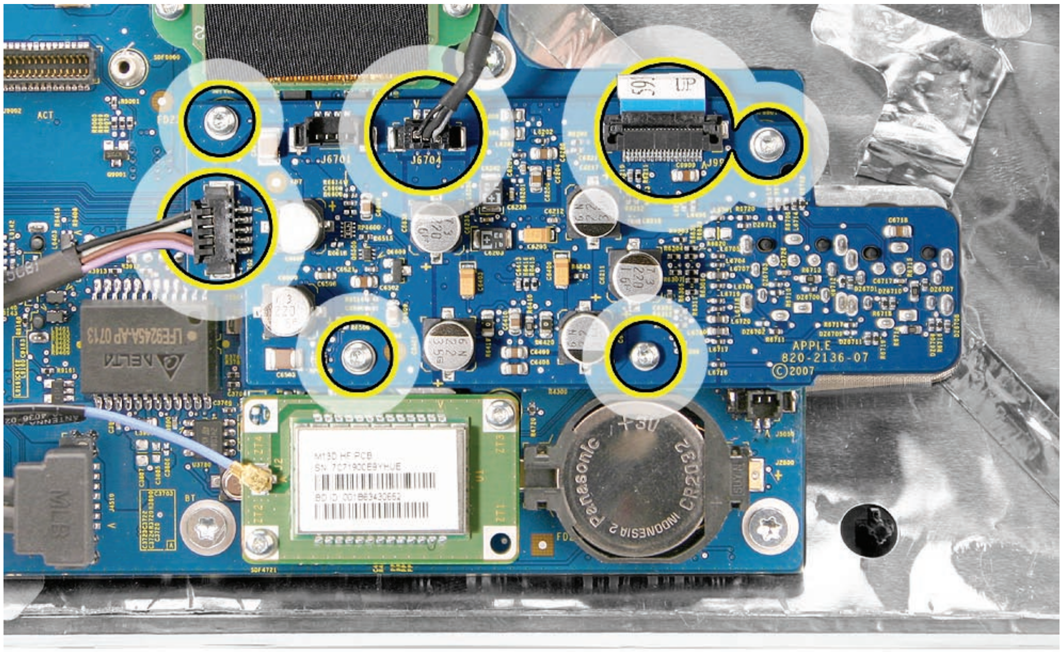
Part Location



Removing the Audio Board

1. Remove the four T6 screws and disconnect the left speaker cable, the microphone cable and carefully flip up the black cable retainer securing the tiny flexible cable.

922-7010

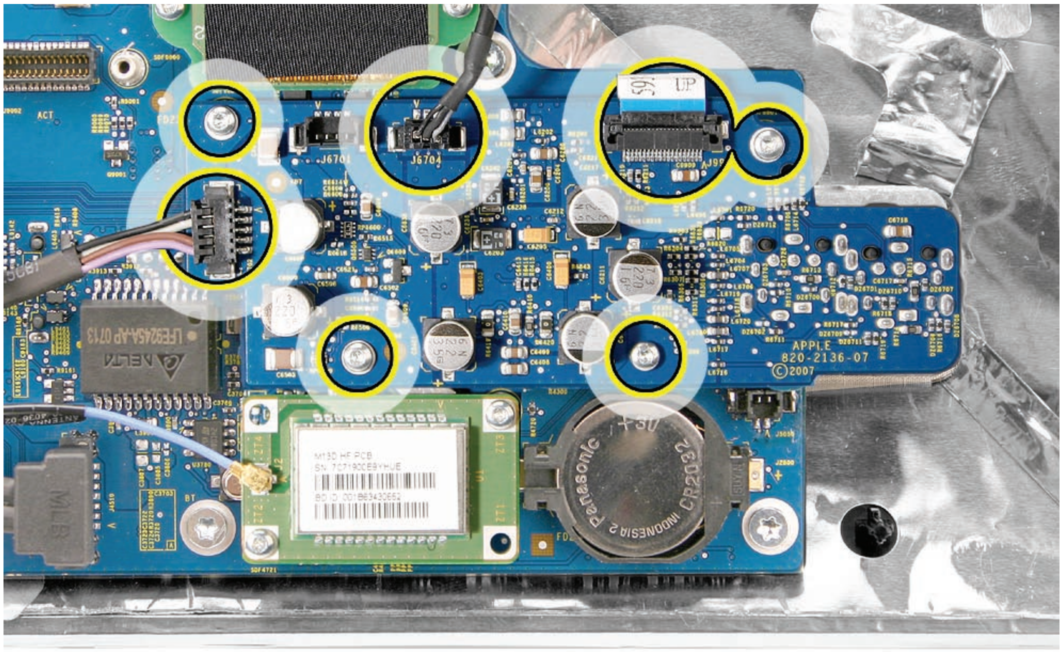


2. Lift the audio board off the logic board.

Replacing the Audio Board

1. Install the audio board onto the logic board. Replace the four T6 screws and connect the left speaker, the microphone, and the flexible cable.

922-7010



2. Replace the right speaker and connect the cable to the audio board.
3. [Replace the logic board.]
4. [Replace the right speaker.]
5. [Replace the display panel.]
6. [Replace the front bezel.]
7. [Clean and replace the glass panel.] **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
8. [Replace the access door.]

Stand

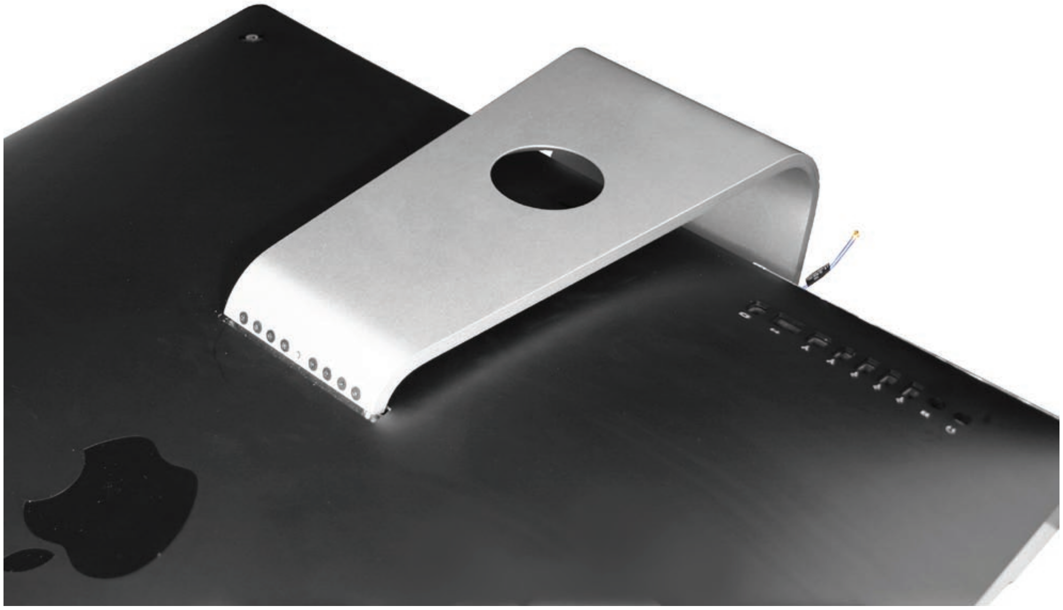
Tools

- Access card to remove the stand
- Torx T10 screwdriver
- Soft, clean cloth

Preliminary Steps

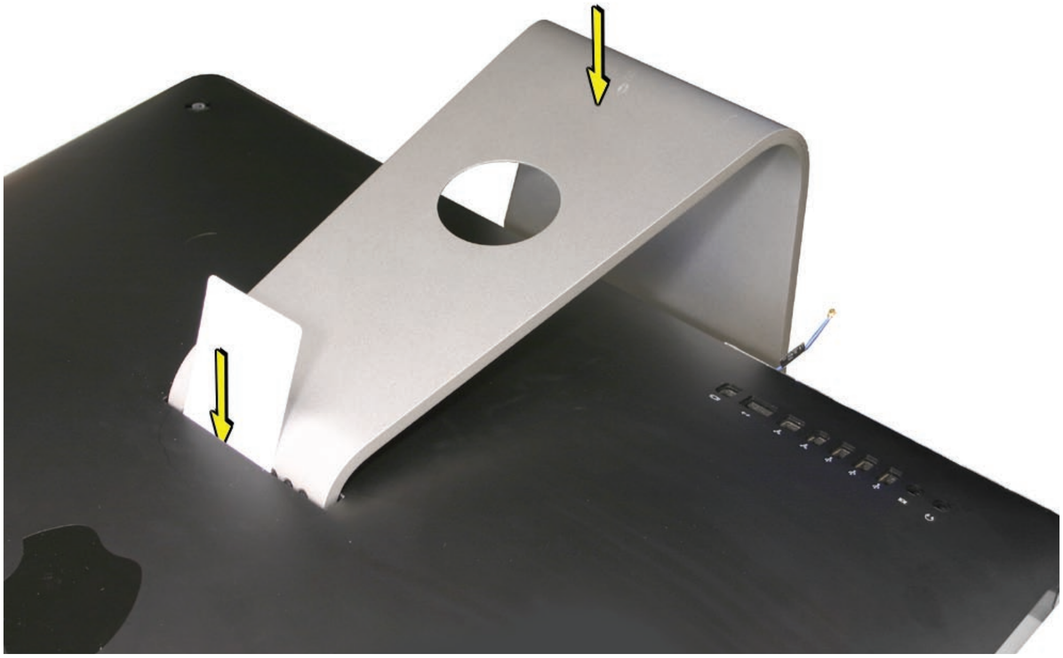
No preliminary steps are required before you begin.

Part Location

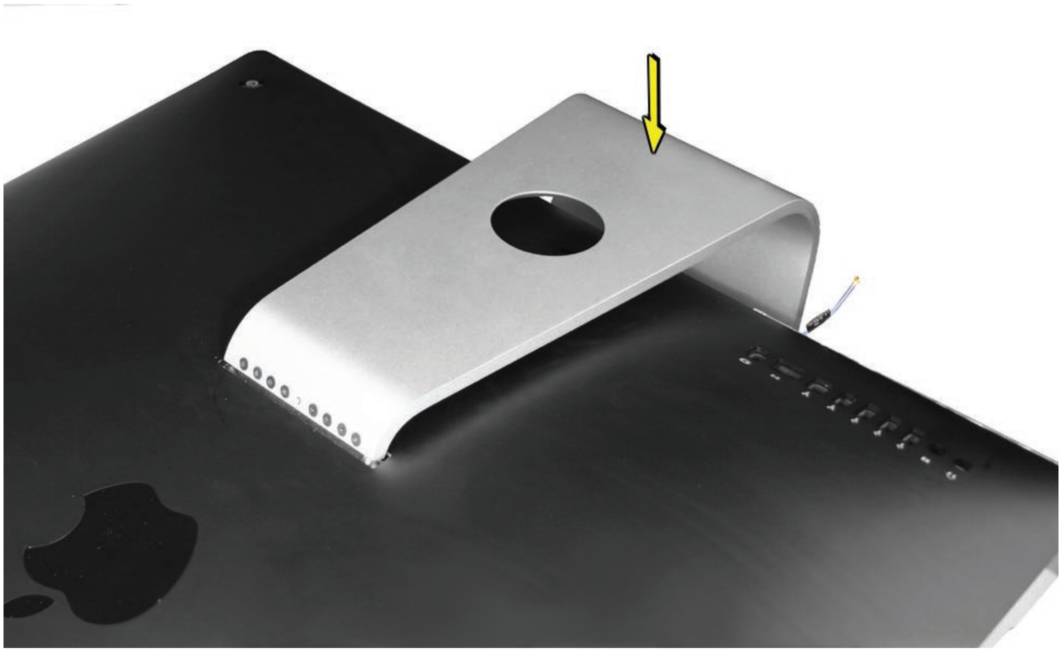


Removing the Stand

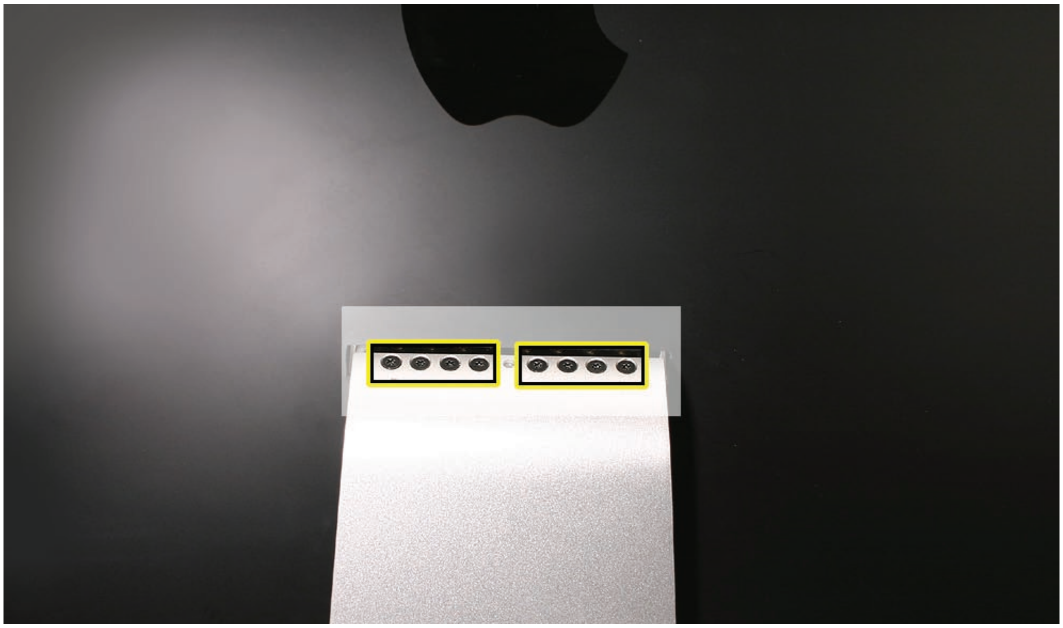
1. Place the computer face down on a table so that the base of the stand extends over the table edge. Press the stand down and insert an access card into the slot between the top of the stand and the rear housing.



2. Insert the card as far as it will go, and press the stand down until you hear a click—the audible cue that tells you that the stand is locked into place.



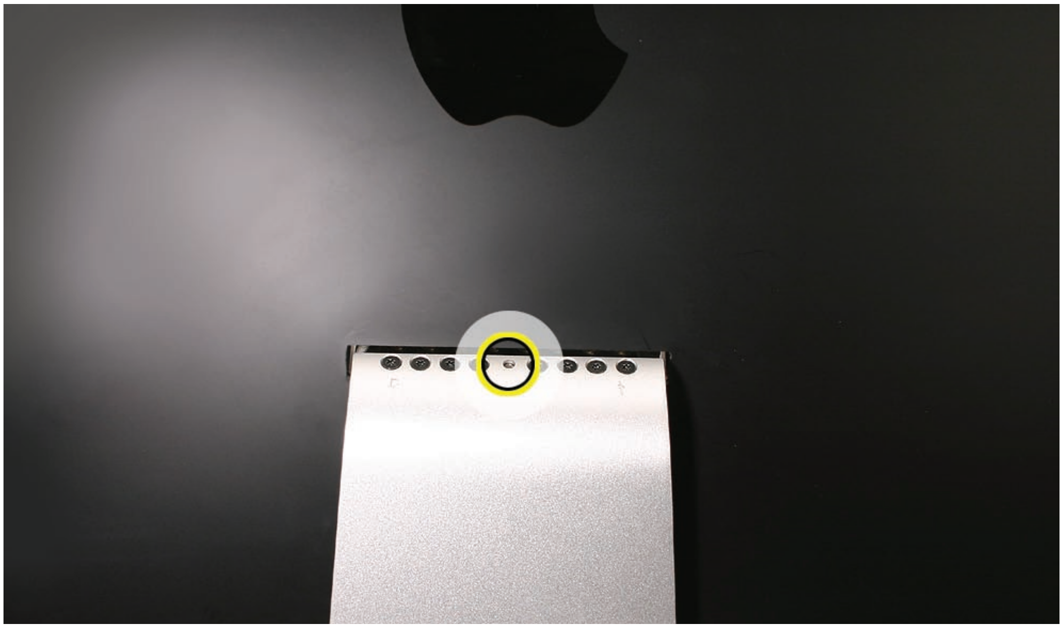
3. Remove the access card, and remove the eight T10 clutch-to-stand screws.



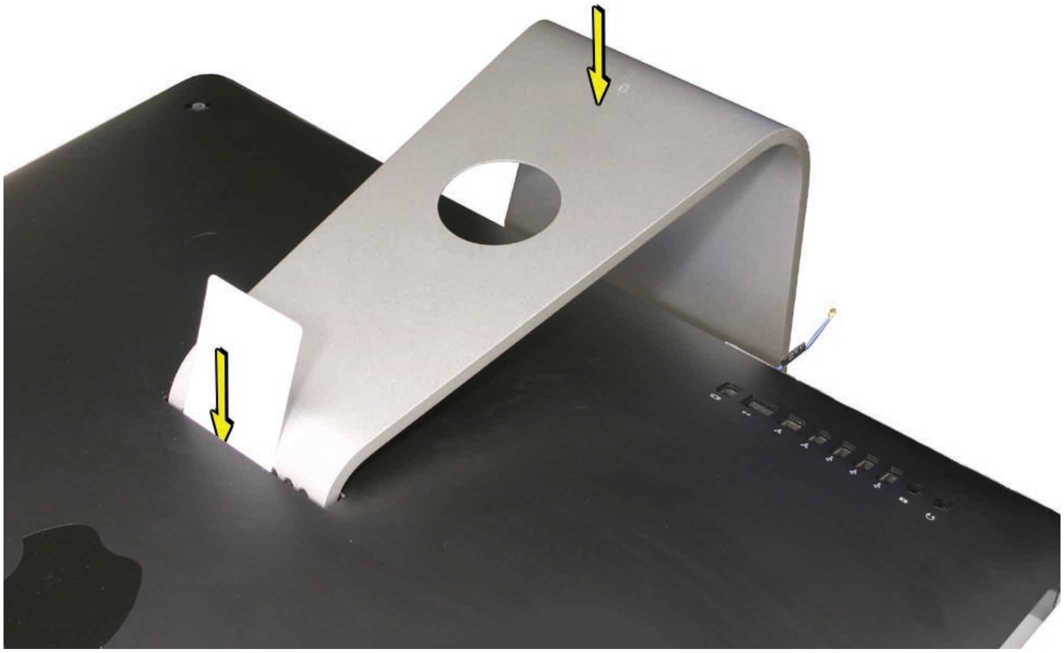
4. Separate the stand from the clutch mechanism and rear housing.

Replacing the Stand

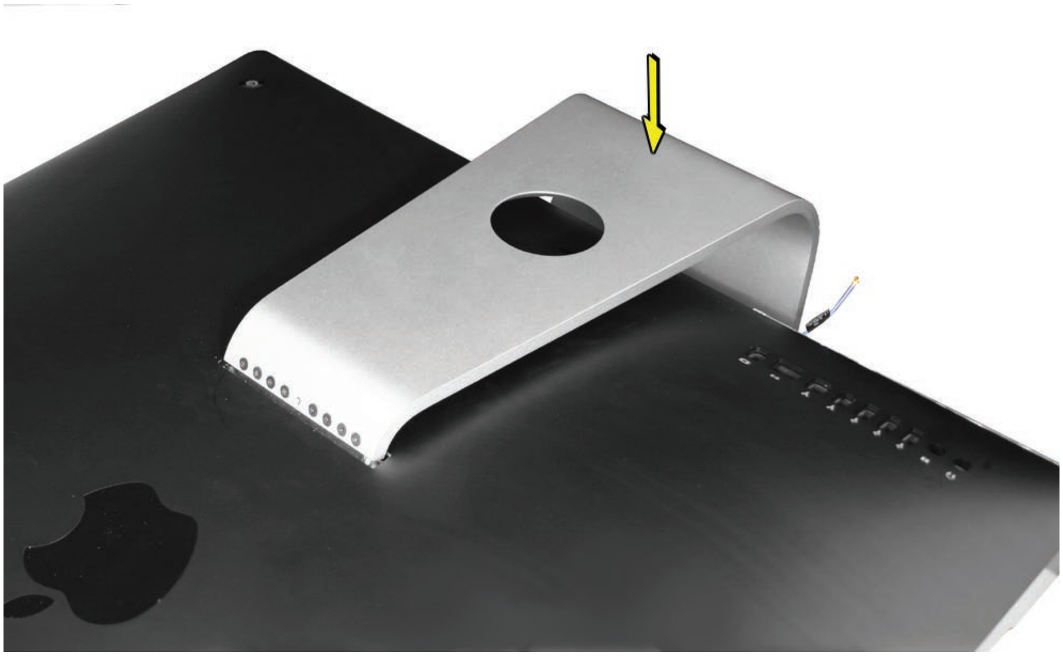
1. Align the pin on the clutch mechanism to the central hole in the stand.



2. Position the stand on the clutch mechanism. Install the eight mounting screws.
3. Place the computer face down on a table so that the base of the stand extends over the table edge. Press the stand down and insert an access card into the slot between the top of the stand and the rear housing.



4. Insert the access card as far as it will go. Gently lift the stand approximately two inches to unlock the clutch mechanism, and then remove the access card. The clutch mechanism should now be unlocked.



5. Stand the computer upright.
6. Clean the glass panel and the front bezel before returning the computer to the customer.

Clutch Cover

Tools

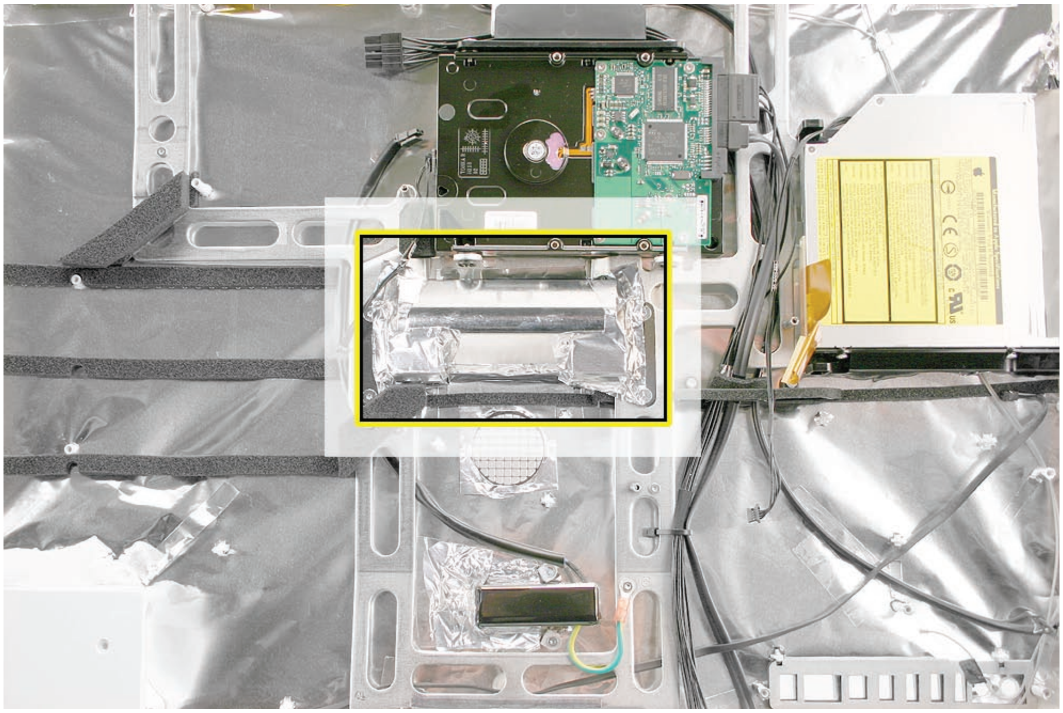
No tools are required for this procedure.

Preliminary Steps

Before you begin, remove the following:

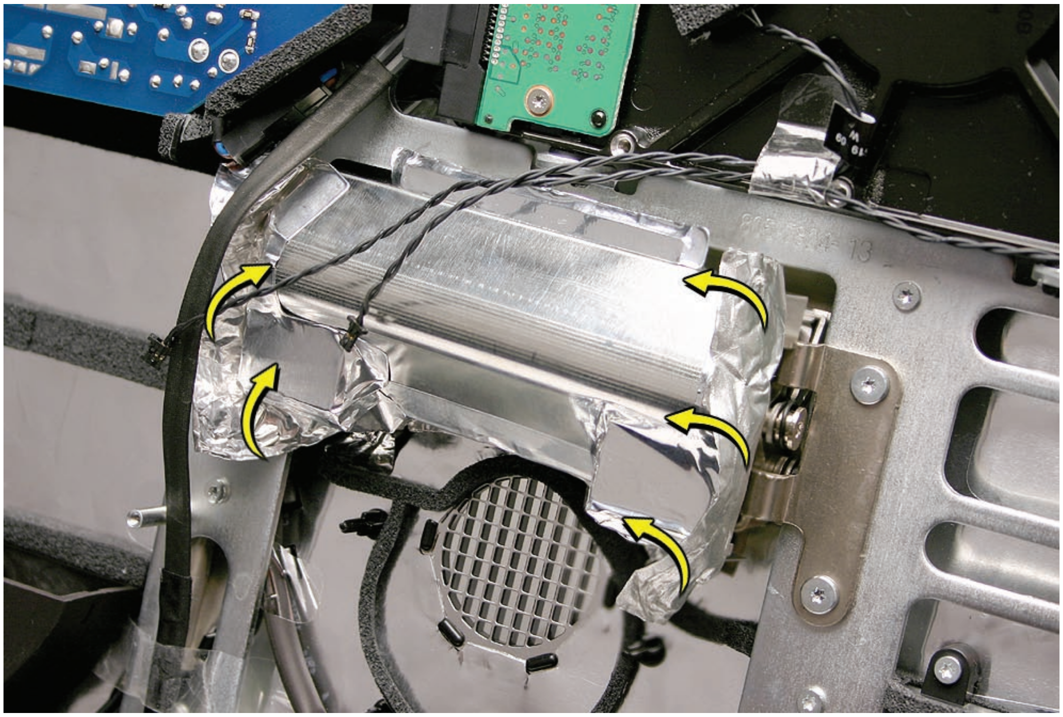
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard Drive fan
- Logic board

Part Location

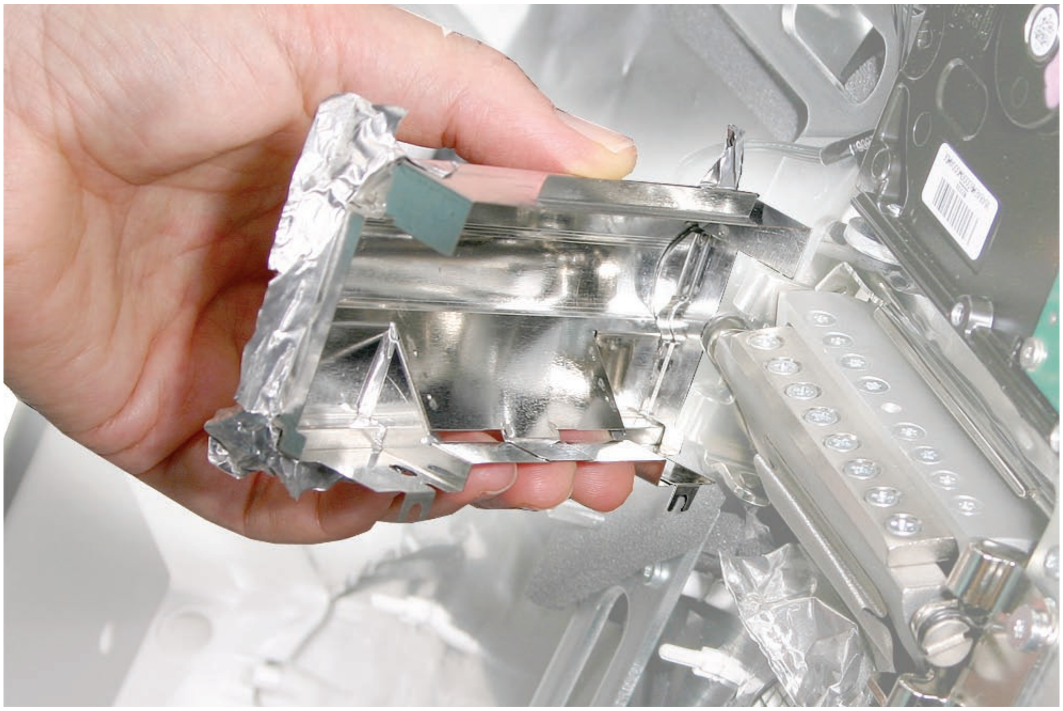


Removing the Clutch Cover

1. Peel up the EMI tape from the top, bottom, and sides of the clutch cover.



2. Lift the cover off of the clutch mechanism.



Replacing the Clutch Cover

1. Replace the metal clutch cover, and make sure the EMI tape holds the top, bottom, and sides of the cover onto the mechanism and rear cover.
2. Replace the hard drive fan.
3. Replace the logic board.
4. Replace the right speaker.
5. Replace the display panel.
6. Replace the front bezel.
7. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
8. Replace the access door.

Clutch Mechanism

Tools

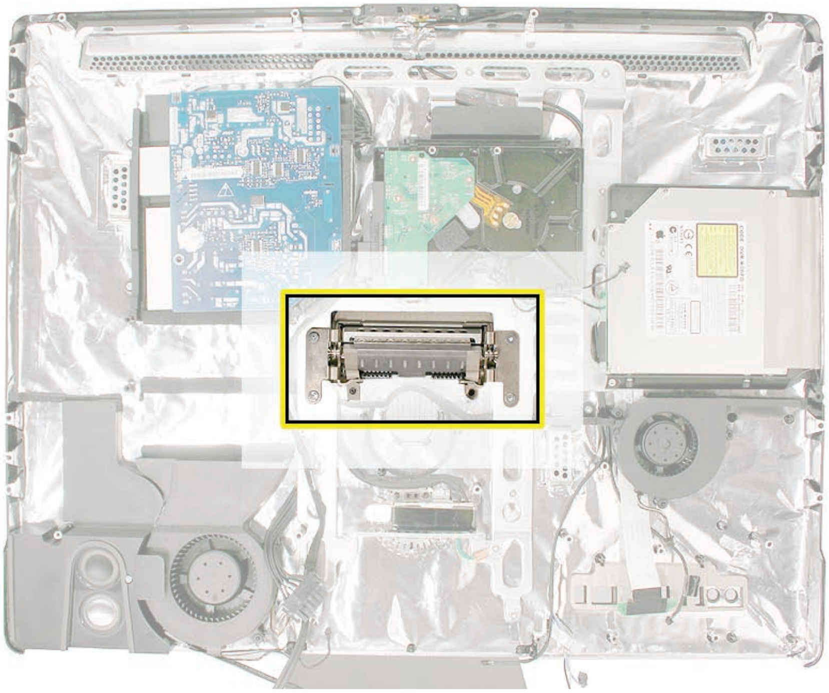
- Torx T10 screwdriver

Preliminary Steps

Before you begin, remove the following:

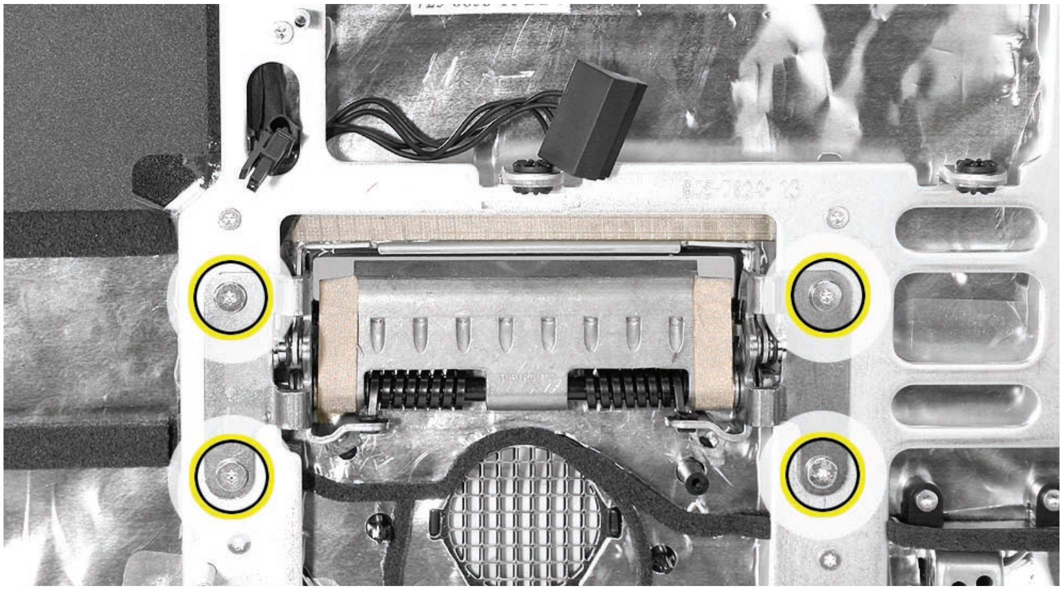
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard Drive fan
- Logic board
- Clutch cover
- Stand

Part Location

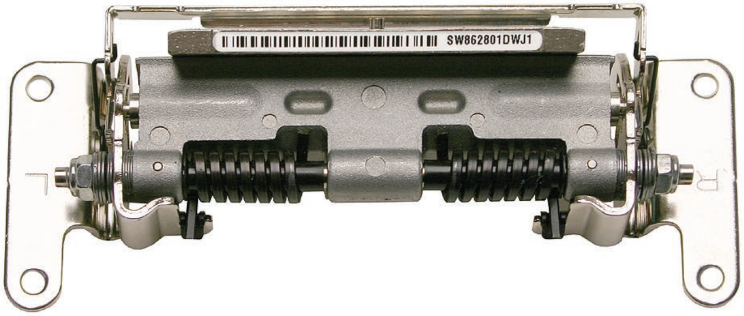


Removing the Clutch Mechanism

1. Using a torx T10 screwdriver, remove the four clutch mounting screws.

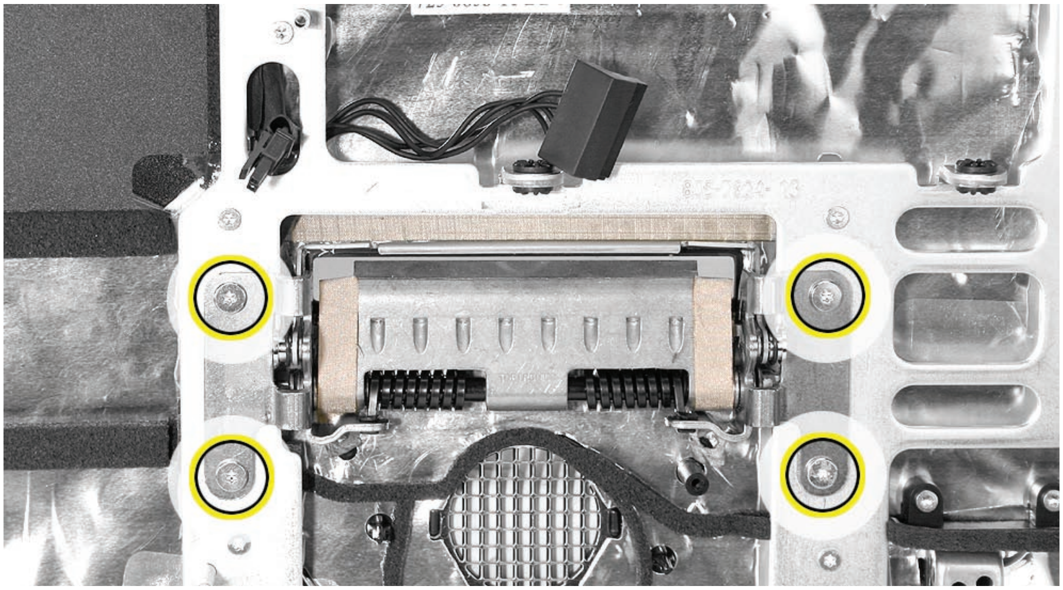


2. If necessary, peel back the mesh EMI tape on the mechanism.
3. Lift the mechanism out of the rear cover. For your reference, front (top image) and back (bottom image) views are shown below).

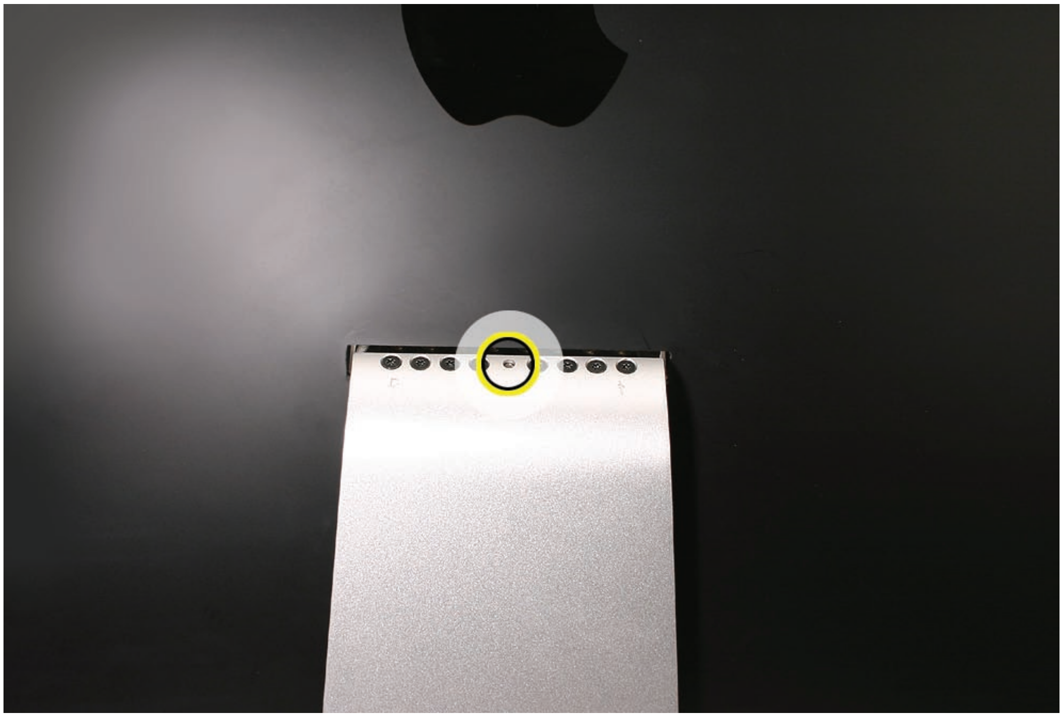


Replacing the Clutch Mechanism

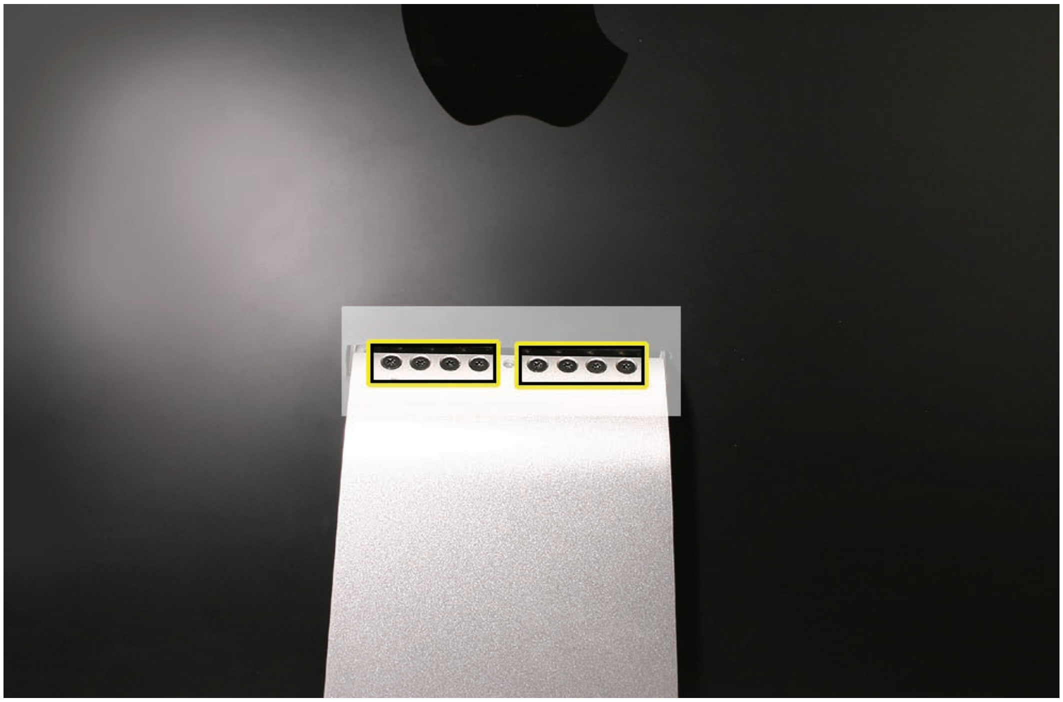
1. Align the mechanism, and install the four screws that secure the clutch to the chassis.



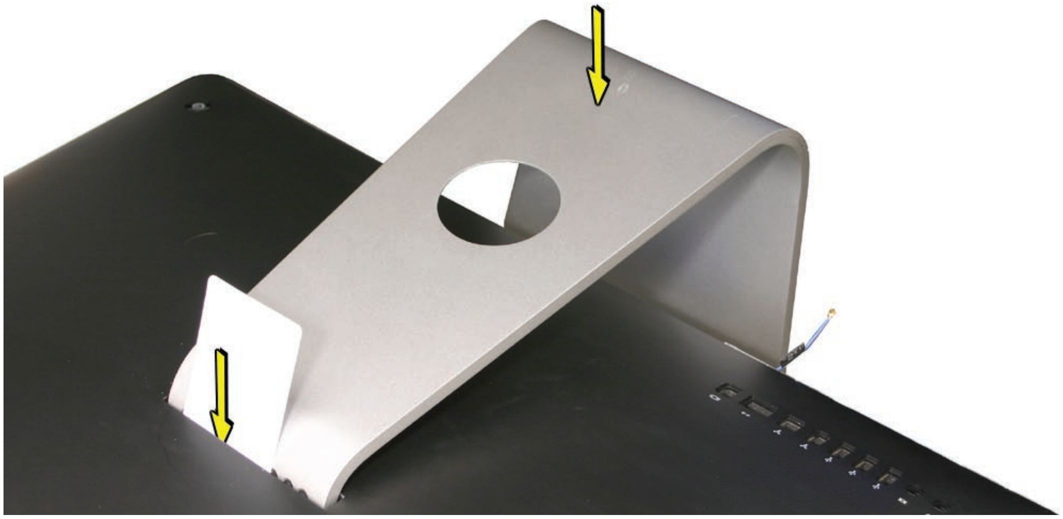
2. Replace the mesh tape on top of the mechanism, press it into place.
3. Locate the computer stand.
4. Align the pin on the clutch mechanism to the central hole in the stand.



5. Install the eight long, clutch-to-stand mounting screws.



6. Replace the metal clutch cover.
7. **Replace the hard drive fan.**
8. **Replace the logic board.**
9. **Replace the right speaker.**
10. **Replace the display panel.**
11. **Replace the front bezel.**
12. Unlock the mechanism so the computer can stand upright. (Go on to the next page)



13. Insert the access card as far as it will go. Gently lift the stand approximately two inches to unlock the clutch mechanism, and then remove the access card. The clutch mechanism should now be unlocked.
14. Stand the computer upright.
15. **Clean and replace the glass panel.** **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
16. **Replace the access door.**

Camera Cable

Tools

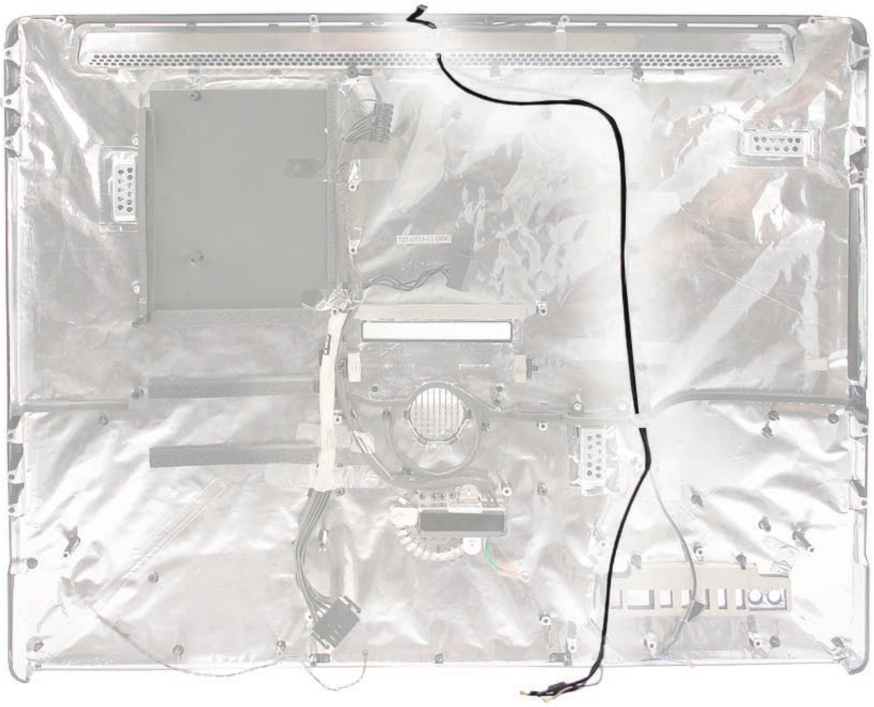
No tools are required to remove the camera/microphone cable.

Preliminary Steps

Before you begin, remove the following:

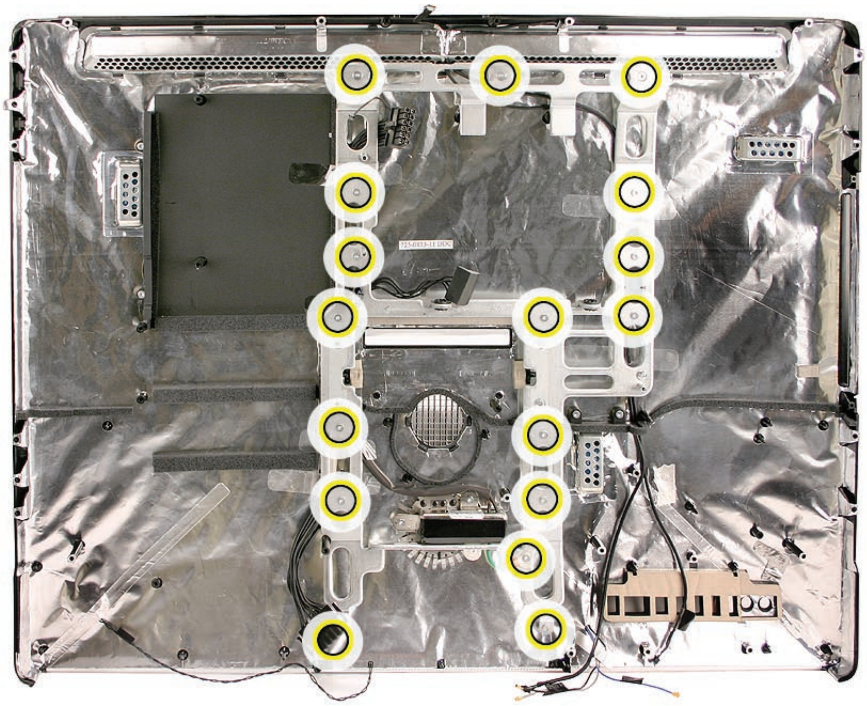
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Optical drive
- Optical drive fan
- Logic board

Part Location

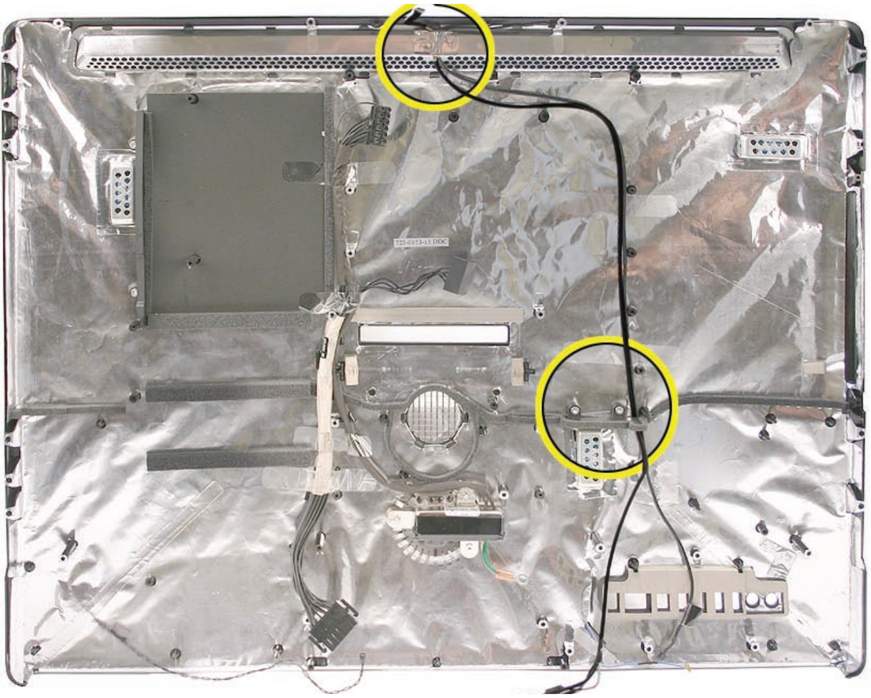


Removing the Camera Cable

1. Remove the chassis screws. Lift the chassis off the rear housing.



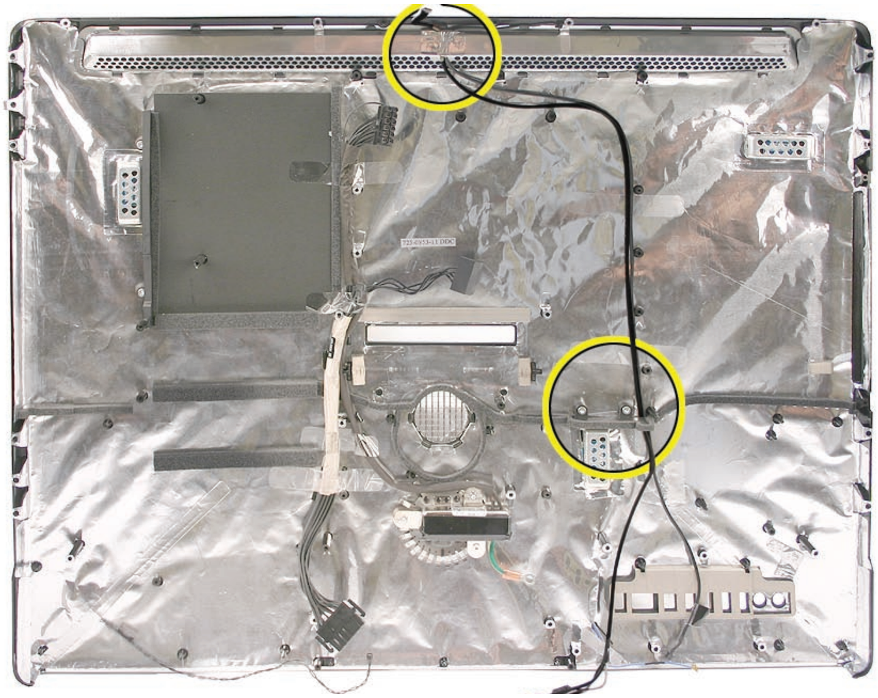
2. At the top of the rear housing, peel back the EMI tape that covers the exposed part of the camera cable on the chassis. Remove the two T8 screws on the cable clamp.



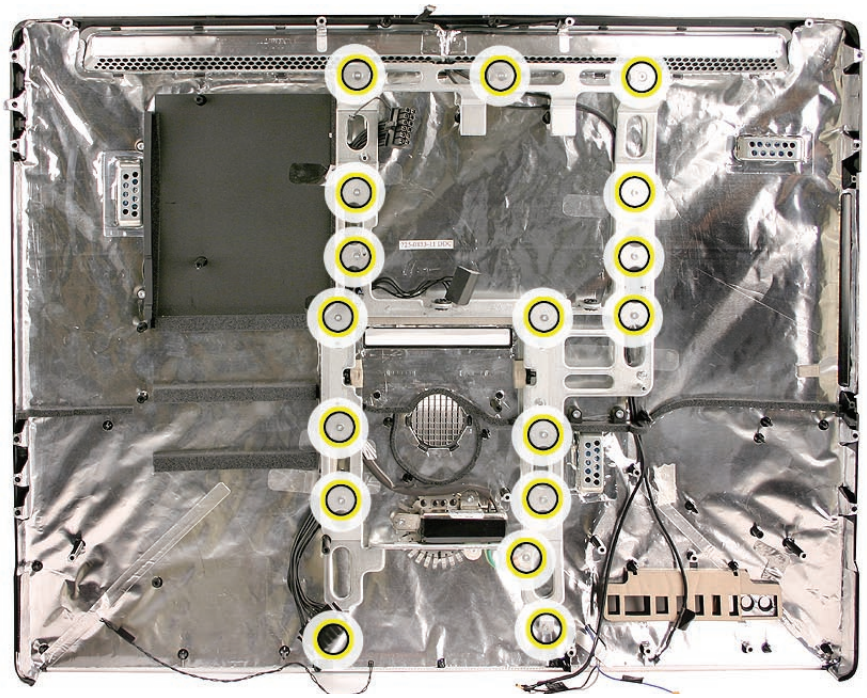
3. Remove any tape securing the camera cable to the rear housing.
4. Lift the camera cable from the rear housing.

Replacing the Camera Cable

1. Route the camera cable into the rear housing.



2. Tape the camera cable to the rear housing. Replace the piece of EMI tape at the top, covering the exposed piece of cable.
3. Replace the chassis screws. Note: The three screws at the top have a flatter head.



4. Replace the hard drive.
5. Replace the optical fan.
6. Replace the optical drive, flex drive cable and screws, and optical drive sensor cable.
7. Replace the logic board.
8. Replace the right speaker.
9. Replace the display panel.
10. Replace the front bezel.
11. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
12. Replace the access door.

Microphone Cable

Tools

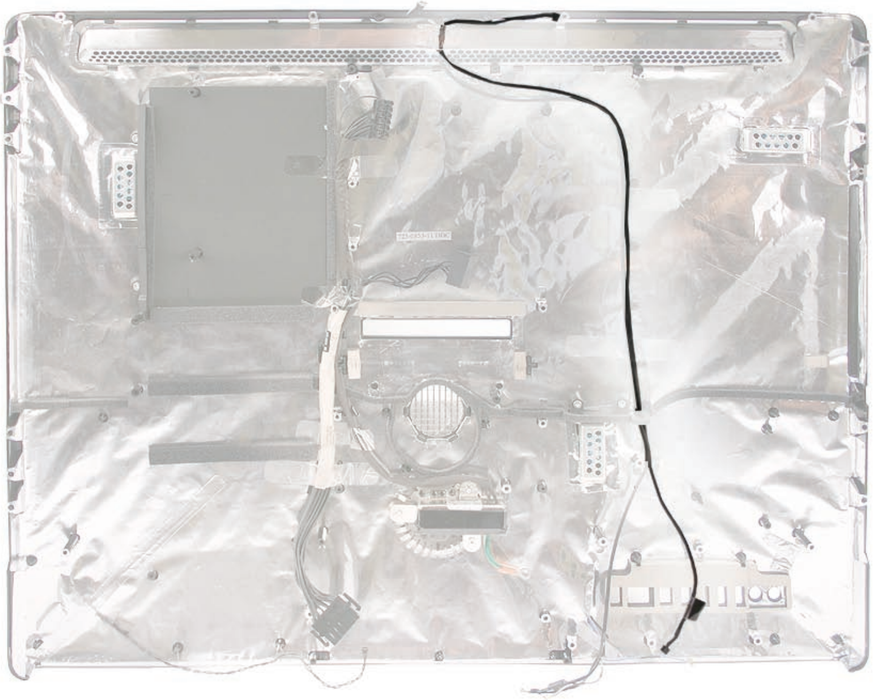
No tools are required to remove the microphone cable.

Preliminary Steps

Before you begin, remove the following:

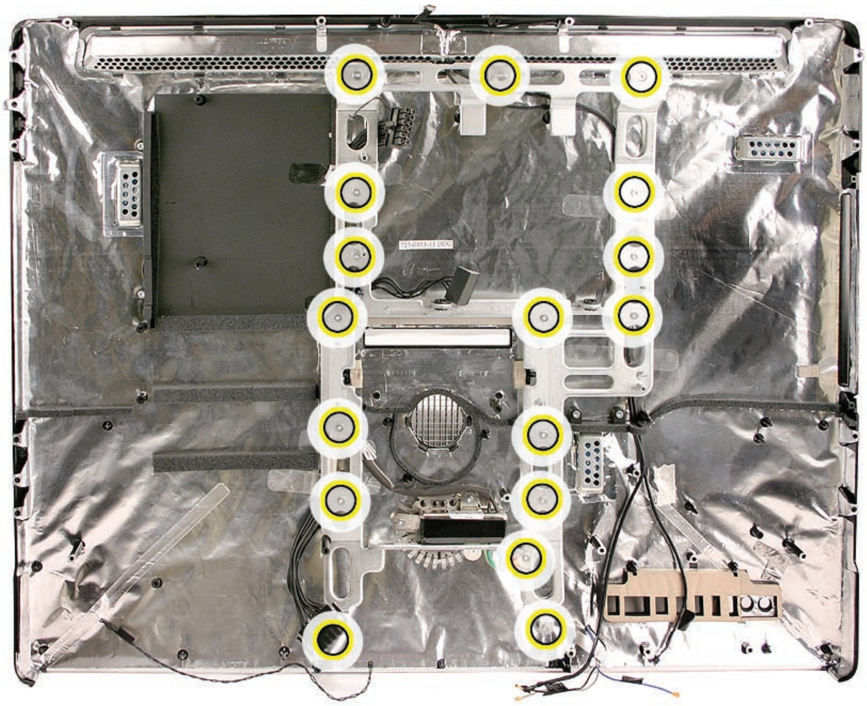
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard drive
- Optical drive
- Optical drive fan
- Logic board

Part Location

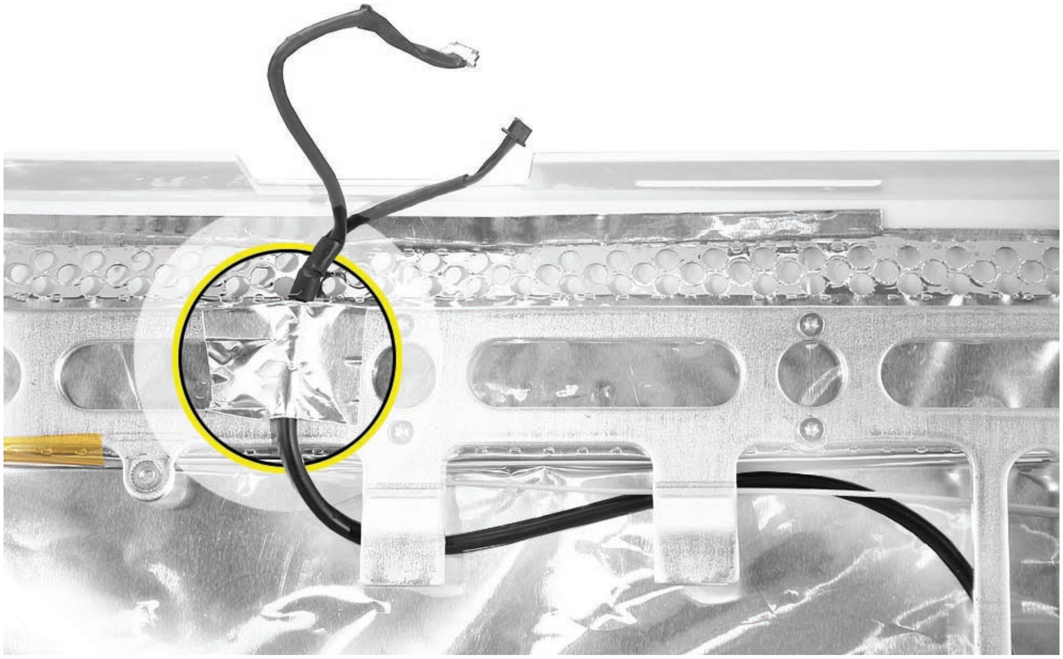


Removing the Microphone Cable

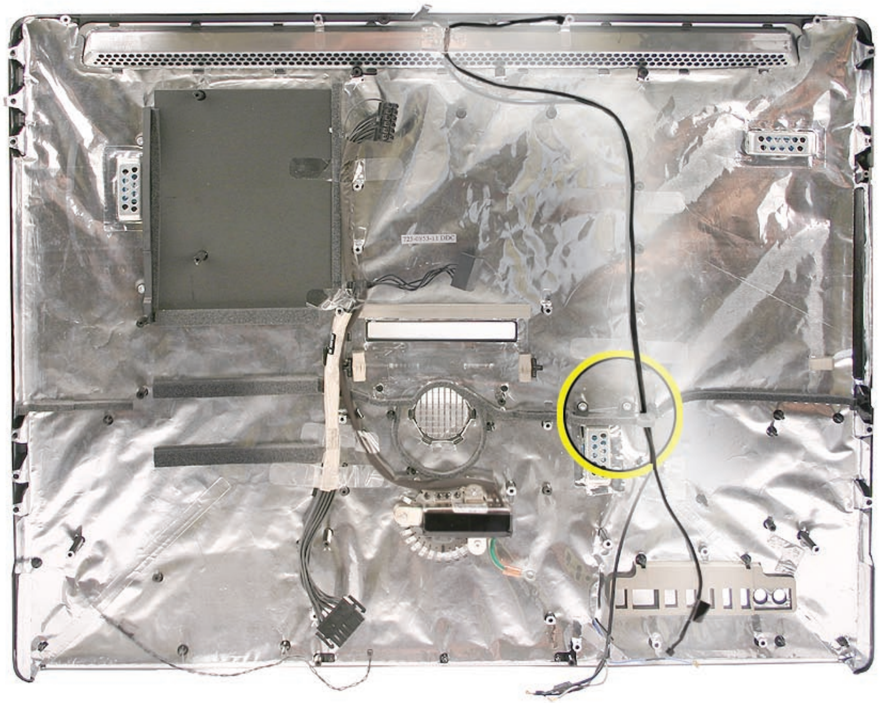
1. Remove the chassis screws. Lift the chassis off the rear housing.



2. At the top of the rear cover, peel back the tape that secures the cable onto the chassis.



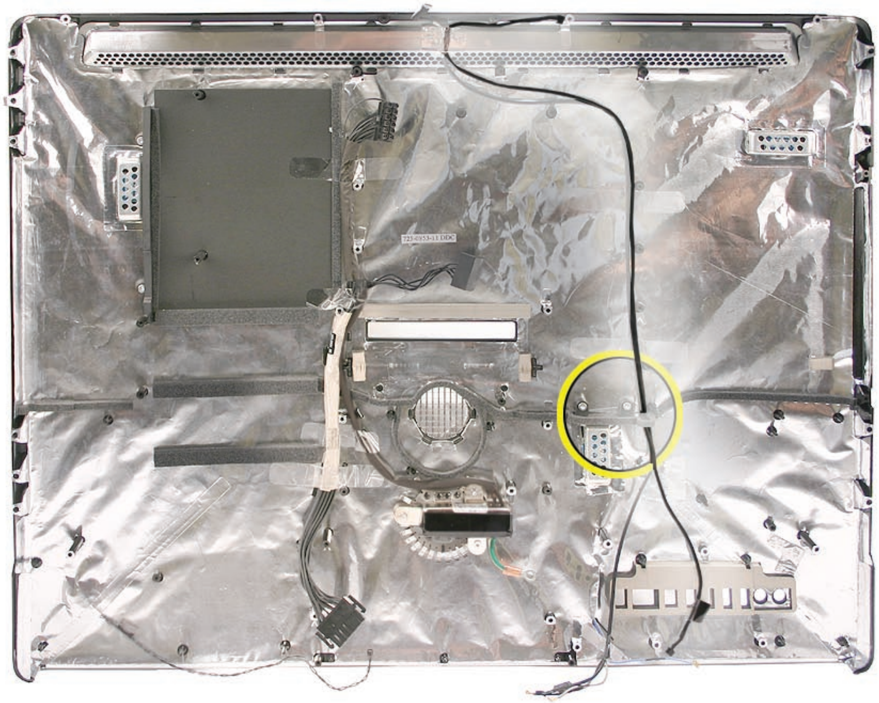
3. Near the middle of the rear housing, remove the two T8 screws on the cable guide



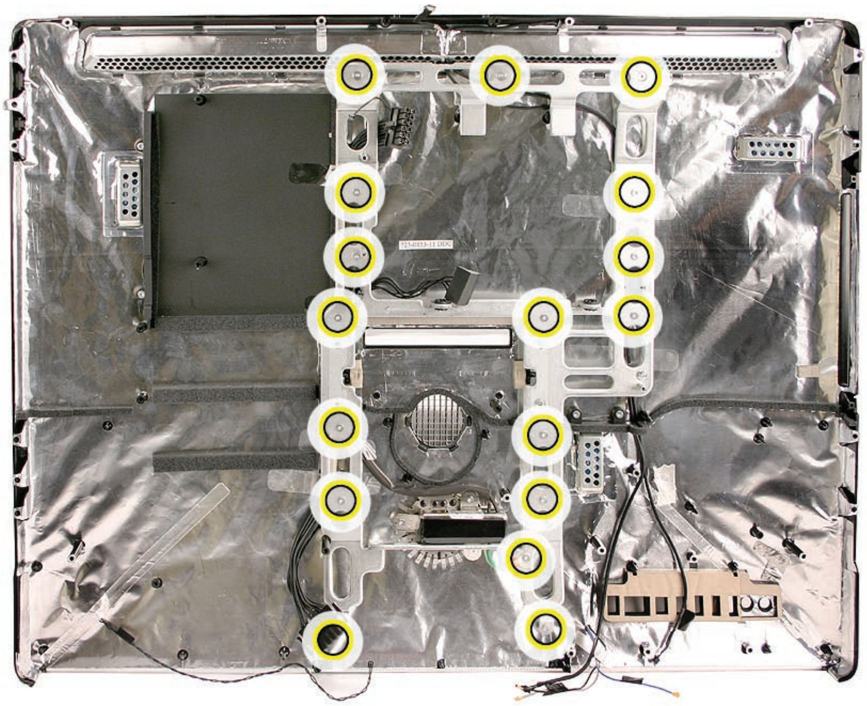
4. Remove any tape securing the camera cable to the rear housing. Lift the camera cable from the rear housing.

Replacing the Camera/Microphone Cable

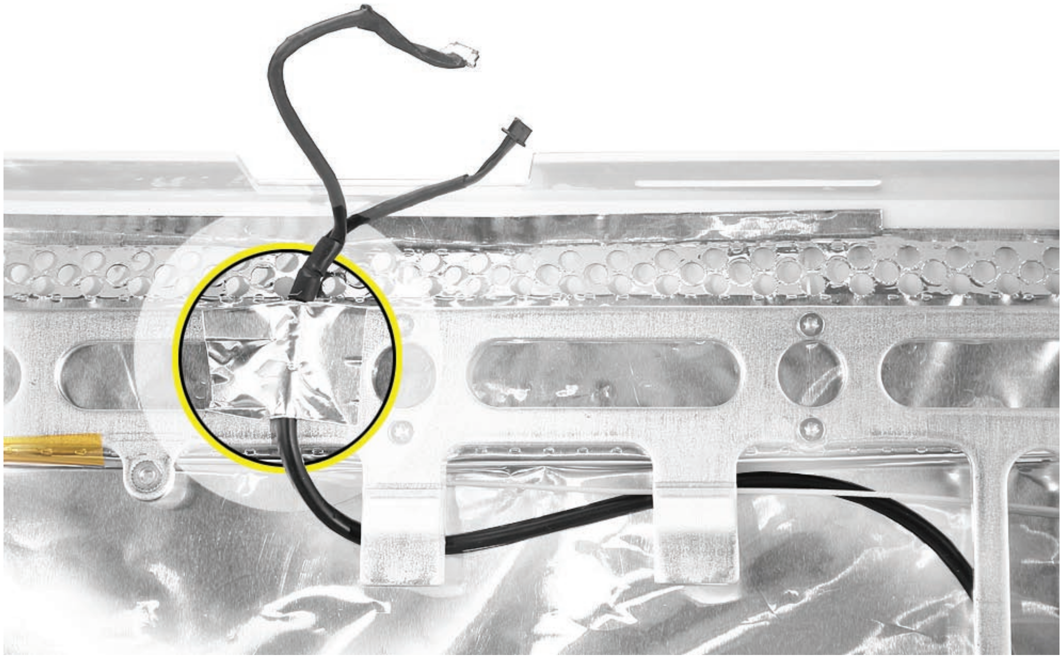
1. Route the camera cable as shown below. Tape the camera cable to the rear housing. Replace the two T8 screws on the cable guide.



2. Replace the chassis screws.



3. Replace the piece of EMI tape at the top of the rear housing, covering the exposed piece of cable.



4. Replace the hard drive.
5. Replace the optical fan.
6. Replace the optical drive, flex drive cable and screws, and optical drive sensor cable.
7. Replace the logic board.
8. Replace the right speaker.
9. Replace the display panel.
10. Replace the front bezel.
11. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
12. Replace the access door.

Hard Drive Data Cable

Tools

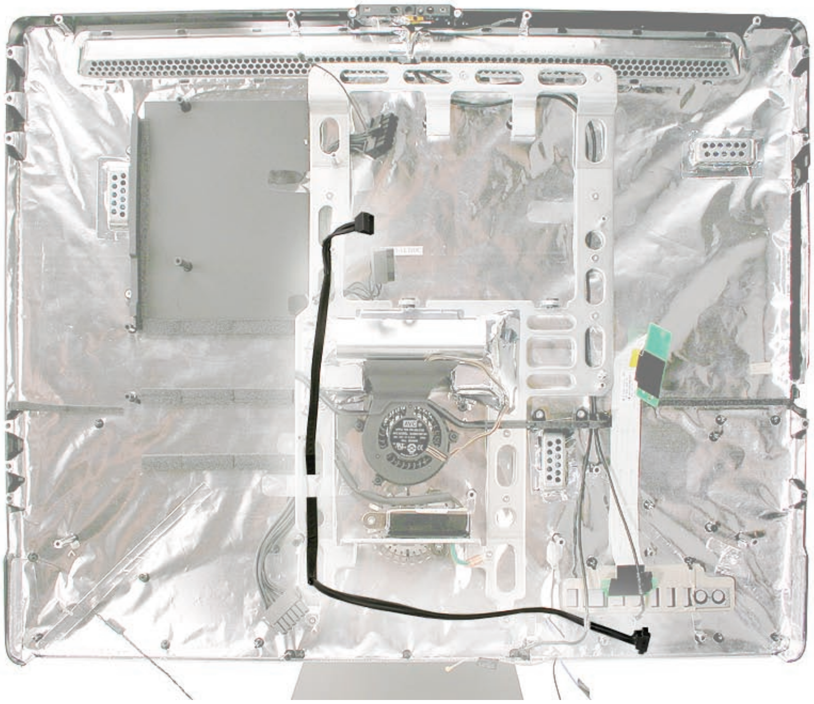
- Torx T10 screwdriver
- Wire cutters

Preliminary Steps

Before you begin, remove the following:

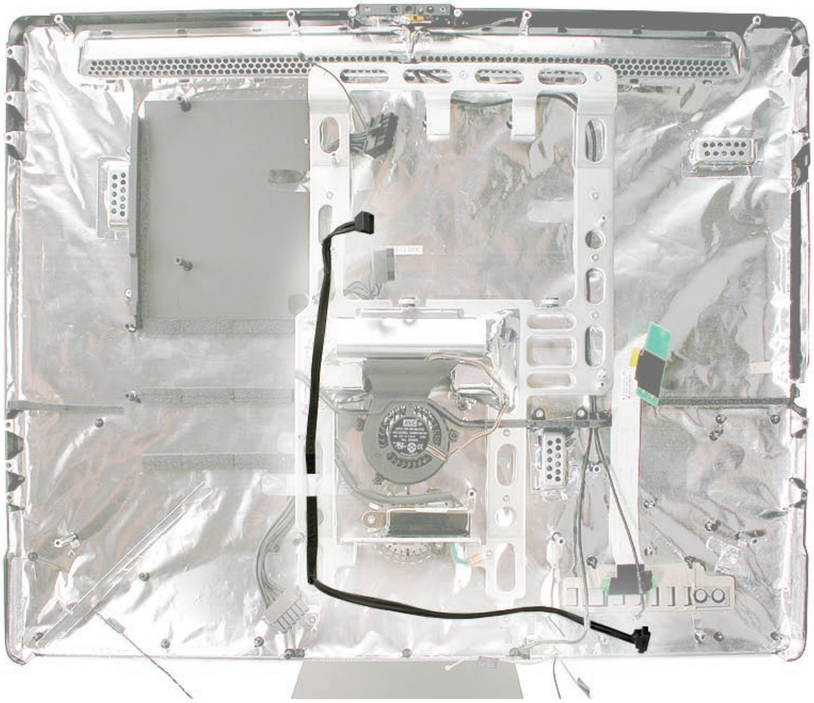
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Logic Board
- Hard drive

Part Location



Removing the Hard Drive Data Cable

1. Remove the tape securing the data cable to the chassis.



2. Note the cable routing before removing the cable.

Replacing the Hard Drive Data Cable

1. Install the hard drive cable on top of the chassis as shown above.
2. Secure the cable to the chassis with kapton tape.
3. Replace the hard drive.
4. Replace the logic board.
5. Replace the right speaker.
6. Replace the display panel.
7. Replace the front bezel.
8. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
9. Replace the access door.

DC Power Cable

Tools

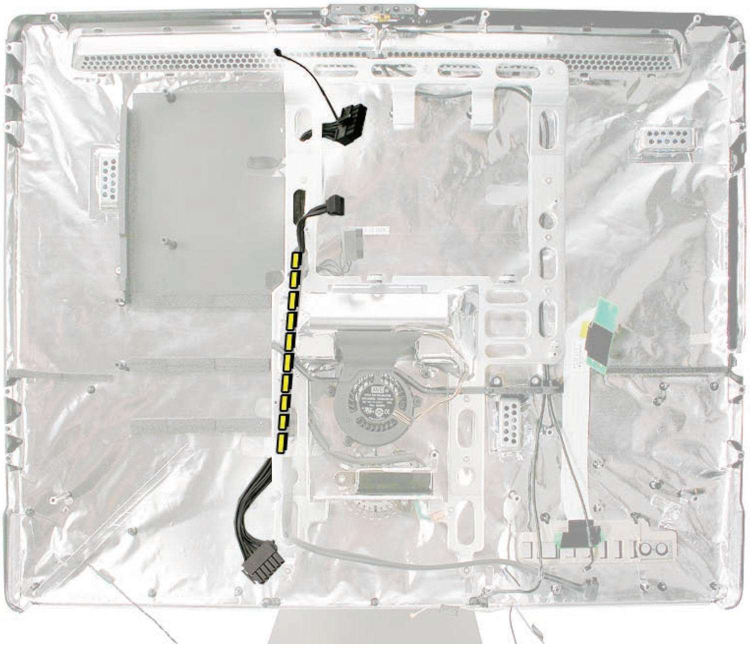
- No tools are required to remove the DC power cable

Preliminary Steps

Before you begin, remove the following:

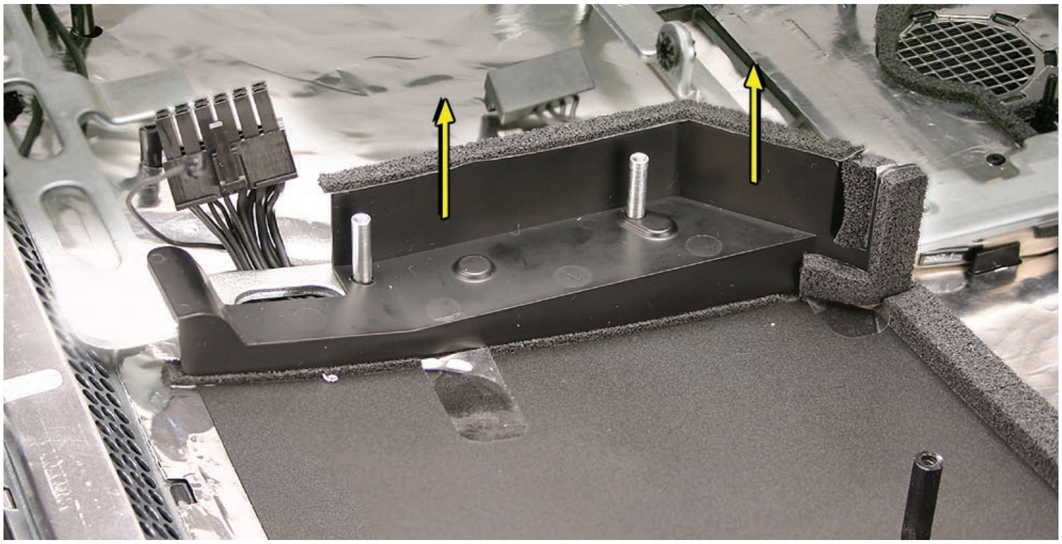
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard drive
- Logic board
- Power supply
- Left speaker
- CPU fan

Part Location

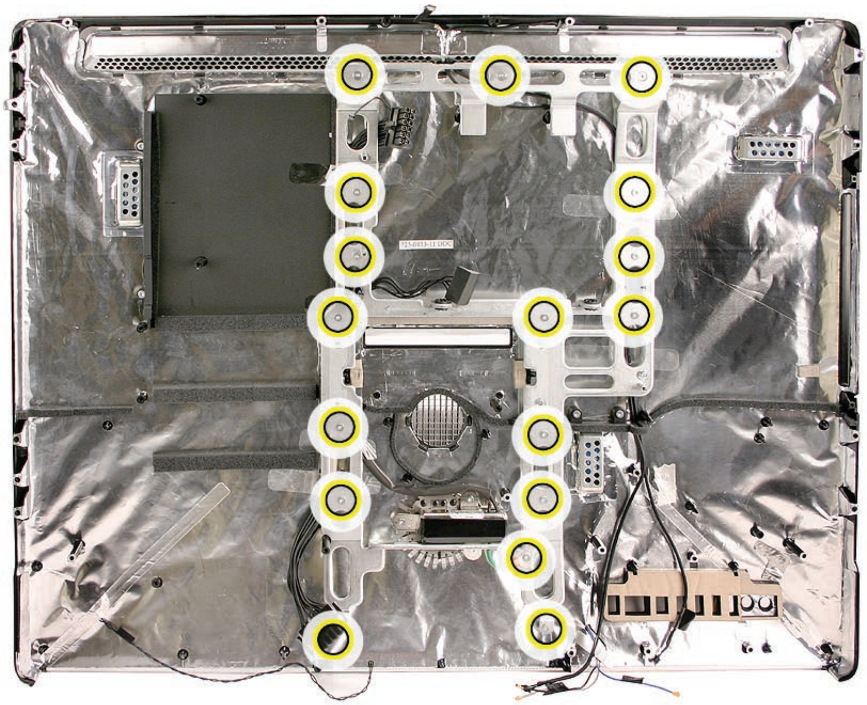


Removing the Power Supply Cable

1. Remove the right pressure wall sitting on top of the chassis. The power supply rests on top of this piece.

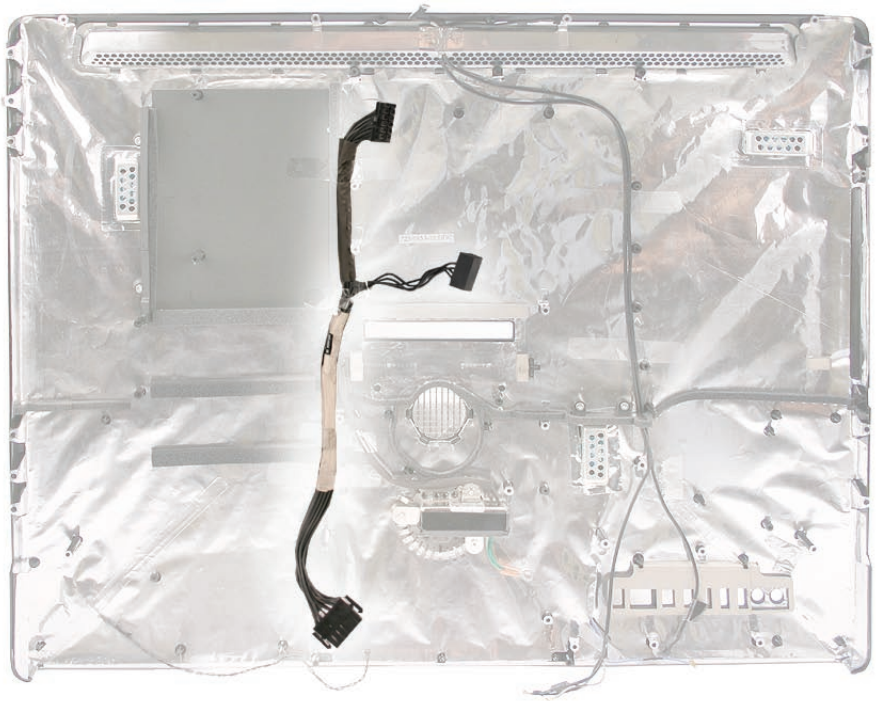


2. Remove the chassis screws. Note: The three screws across the top of the chassis have a flatter head than the other chassis screws.



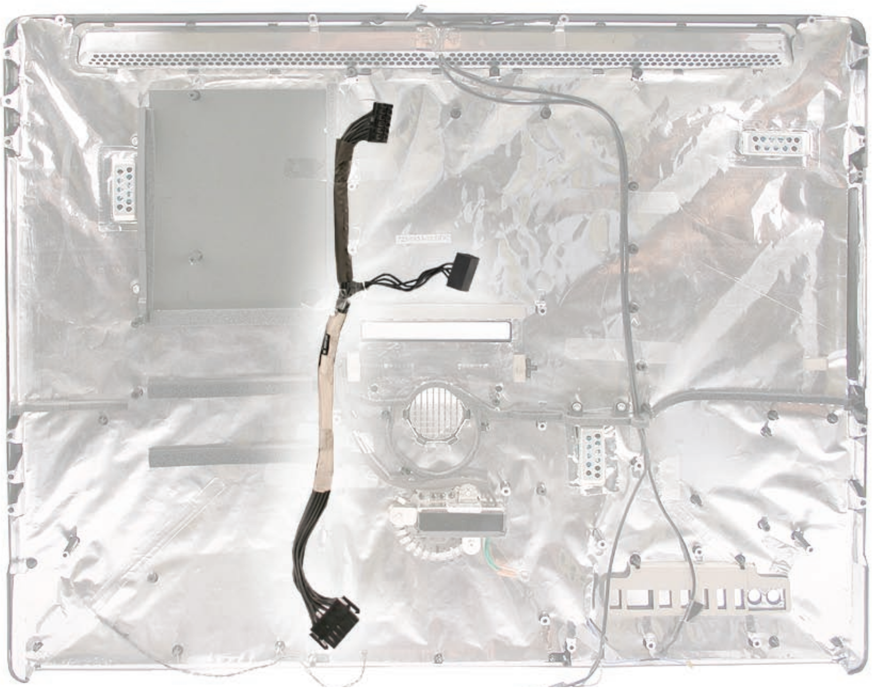
3. Remove any kapton tape securing the DC power cable to the rear housing.

4. Lift the DC power cable out of the rear housing. Note the cable routing between the guide posts on the rear housing.

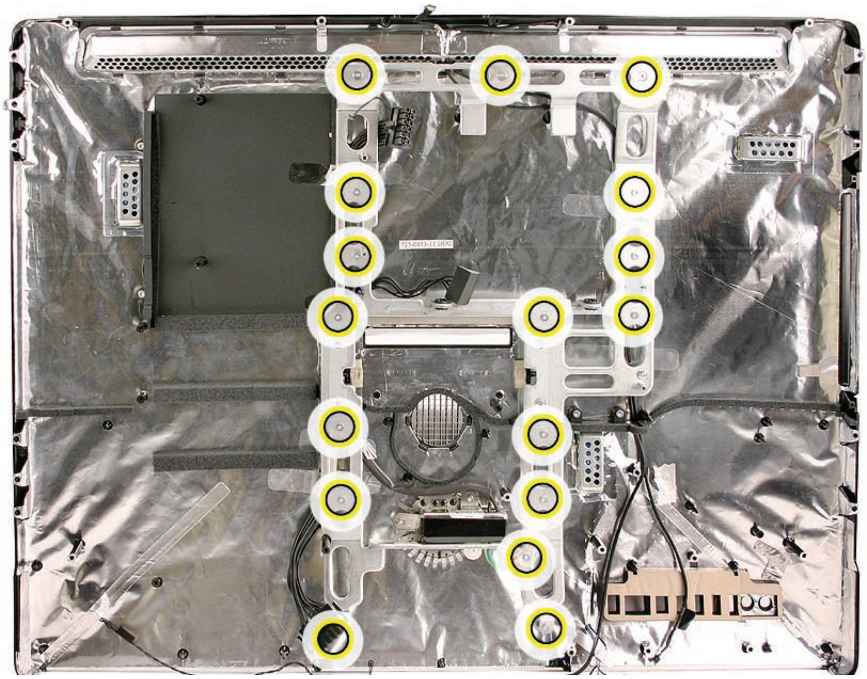


Replacing the Power Supply Cable

1. Install the power supply cable into the rear housing as shown below. Position the cable between the black guide posts on the rear housing.
2. Replace any kapton tape securing the cable to the rear housing.



3. Replace the chassis screw.



4. Replace the cpu fan.
5. Replace the power supply.
6. Replace the hard drive.
7. Replace the logic board.
8. Replace the right speaker.
9. Replace the display panel.
10. Replace the front bezel.
11. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
12. Replace the access door.

Rear Cover

Tools

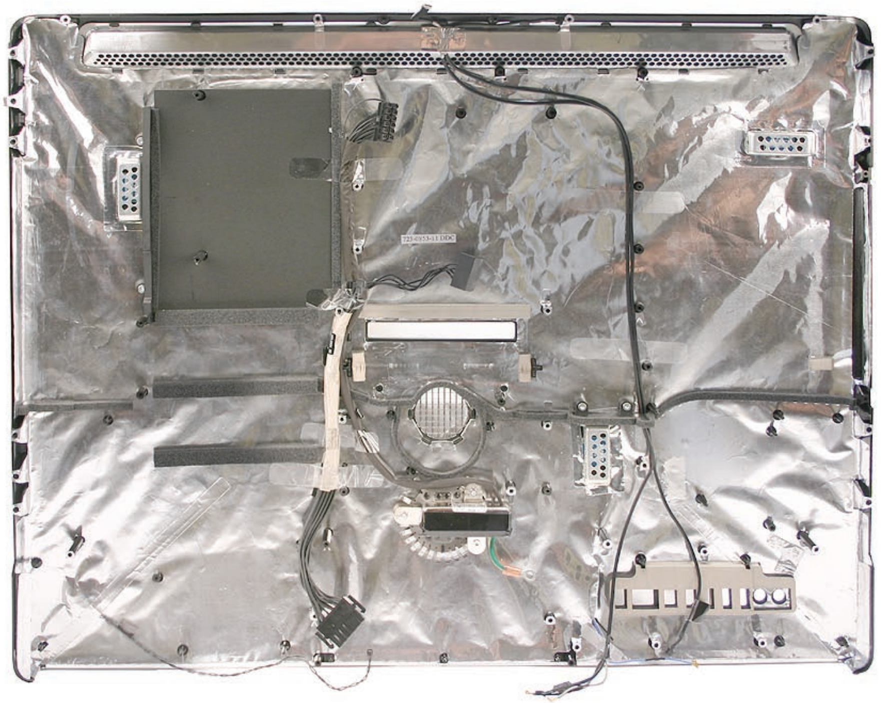
No tools are required to remove the rear cover.

Preliminary Steps

Before you begin, remove the following:

- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard drive
- Logic board
- Power supply
- Left speaker
- CPU fan
- Optical drive
- Optical fan
- Optical cable
- Hard drive fan
- Hard drive data cable

Part Location



Removing the Rear Cover

With all of the preliminary steps performed, the rear cover is the remaining assembly. A replacement rear cover includes:

- EMI shielding
- Bluetooth antenna
- AirPort antennas
- Power supply cable
- Camera and microphone cable
- Power button cable
- AC inlet
- Gaskets
- Chassis and screws
- Power supply pressure walls, left and right

Replacing the Rear Cover

1. Replace the mechanism.
2. Replace the stand.
3. Replace the mechanism cover.
4. Replace the optical flex cable.
5. Replace the hard drive fan.
6. Hard drive SATA cable
7. Replace the optical fan.
8. Replace the CPU fan.
9. Replace the logic board.
10. Replace the left speaker.
11. Replace the right speaker.
12. Replace the optical drive.
13. Replace the hard drive.
14. Replace the power supply.
15. Replace the display panel.
16. Replace the front bezel.
17. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures to ensure the glass is clean and free of particles.
18. Replace the access door.

Chassis

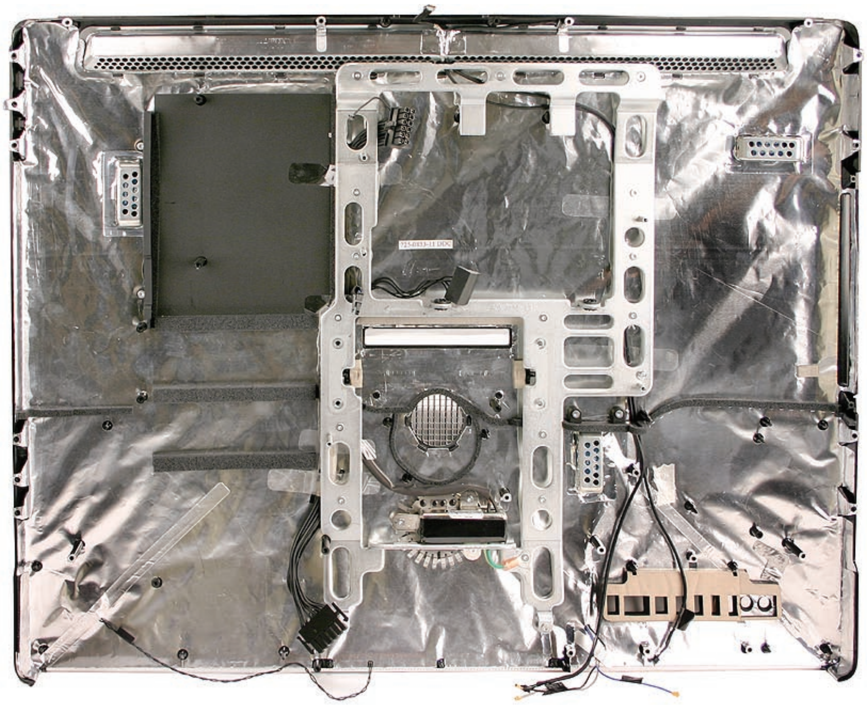
Tools

- Torx T8 screwdriver

Preliminary Steps

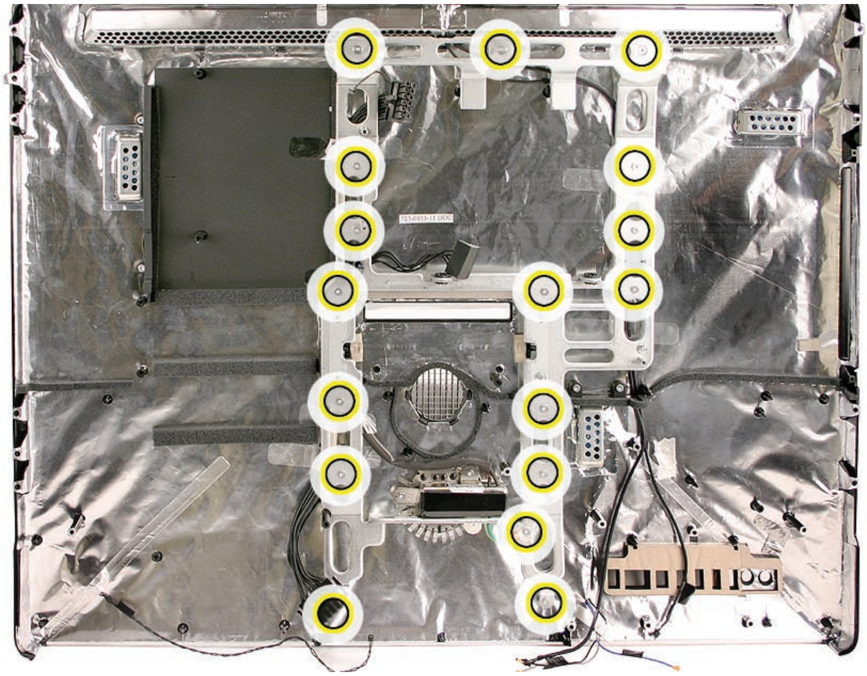
- Access door
- Glass panel
- Front bezel
- LCD Panel
- Speaker, right
- Hard drive
- Logic board
- Power supply
- Left speaker
- CPU fan
- Optical drive
- Optical fan
- Optical cable
- Hard drive fan
- Hard drive data cable
- Mechanism cover
- Stand
- Mechanism

Part Location



Removing the Chassis

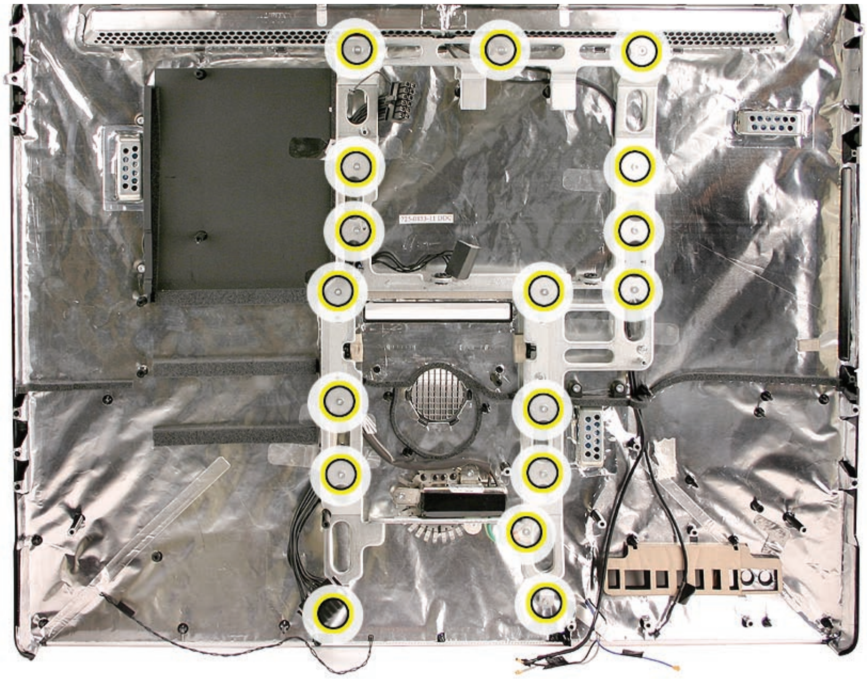
1. Remove sixteen chassis screws and the AC power inlet ground screw. The three screws across the top are a longer flat-head T8 screws.



2. Pull the ground screw cable through the opening in the chassis.
3. Lift the chassis out of the rear housing.

Replacing the Chassis

1. Position the chassis into the rear housing. Line up the top screw holes with the rear housing.
2. Replace the top three chassis screws. **Note:** The three screws at the top are longer than the other chassis screws.

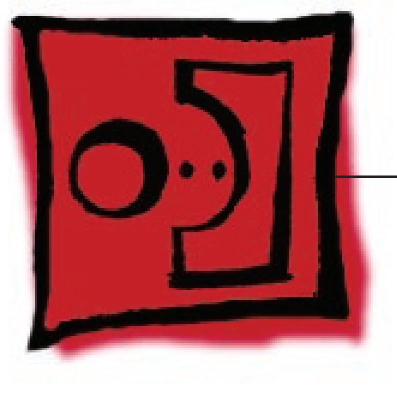


3. Pull the AC ground wire through the hole in the chassis.
4. Replace the AC inlet ground screw.
5. Replace the right pressure wall on top of the chassis.
6. Replace the remaining chassis screws (see above photo).
7. Replace the mechanism.
8. Replace the stand.
9. Replace the hard drive
10. Replace the optical fan.
11. Replace the optical drive, flex drive cable and screws, and optical drive sensor cable.
12. Replace the logic board.
13. Replace the right speaker.
14. Replace the display panel.
15. Replace the front bezel.
16. Clean and replace the glass panel. **Note**: This step is very important. Follow the procedures

to ensure the glass is clean and free of particles.

17. **Replace the access door.**

Service Source



Troubleshooting

iMac (24-inch Mid 2007)

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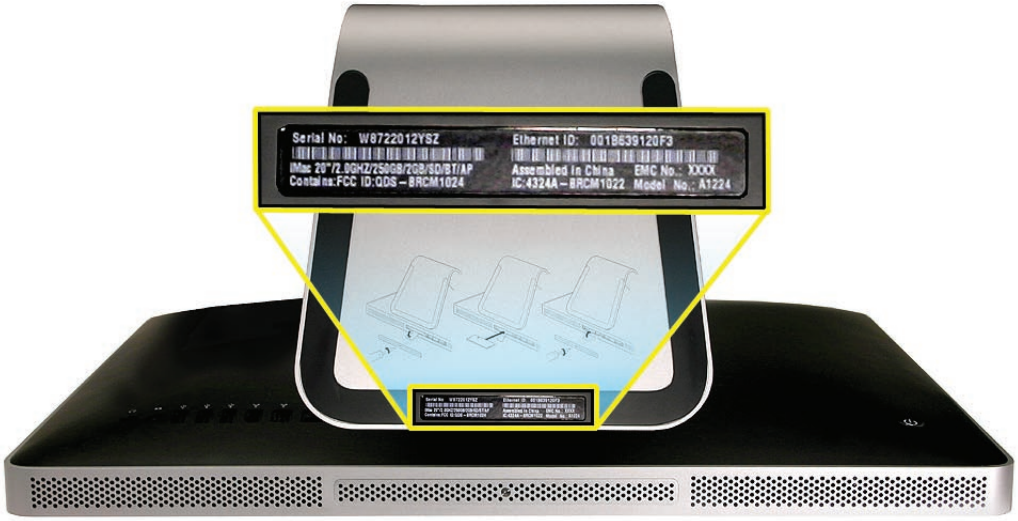
General Information

Serial Number

The serial number for the iMac (24-inch 2007) model is located on the bottom of the computer stand.


Serial No: W8722012YSZ
iMac 20"/2.0GHZ/250GB/2GB/SD/BT/AP
Contains:FCC ID:QDS – BRCM1024
Ethernet ID: 001B639120F3
Assembled in China EMC No.: XXXX
IC:4324A – BRCM1022 Model No.: A1224

Power On Self Test (POST)

Intel-based Mac computers such as the iMac (24-inch 2007) rely on a combination of tones and blinking LEDs to display Power On Self Test (POST) error codes.

- If the computer detects out-of-specification or no SDRAM or the RAM installed does not meet the appropriate specifications, the screen will remain black but the computer will beep. This error condition may be due to physically damaged RAM, installing the incorrect type of RAM, or not having RAM installed.
- Some RAM may appear to pass the Power-On-Self-Test (POST) but still cannot be used by the operating system. In this case, the computer will display a gray screen, sound three tones and repeat the tones until the computer is turned off.
- The solution to both of these situations is to first re-seat the memory and test the computer again. If the memory fails the POST test again, try memory that has been verified to work correctly on another system (i.e., "known-good") or order new memory.

DDR Memory

The iMac (24-inch 2007) computer has two SDRAM slots in the bottom of the computer. The iMac ships from the factory with at least 1GB MB of DDR2 SDRAM installed in the left slot. (The computer may come with more RAM, depending on how the computer was ordered from Apple.)

The maximum amount of RAM you can install in the iMac is 4 GB total. You can use small-outline dual inline memory modules (SO-DIMMS) of 512 MB, 1 GB, or 2 GB that meet all of these criteria:

- PC2-5300
- unbuffered
- nonparity
- 200-pin
- 667 MHz DDR2 SDRAM

Note: DIMMs with any of the following features are NOT supported in this iMac:

- registers or buffers
- PLLs
- ECC
- parity
- EDO RAM

How to Reset the System Management Controller (SMC)

The System Management Controller (SMC) is a chip on the logic board that controls all power functions for your computer. If your computer is experiencing any power issue, resetting the SMC may resolve it. The SMC controls several functions, including:

- Telling the computer when to turn on, turn off, sleep, wake, idle, and so forth.
- Handling system resets from various commands.
- Controlling the fans.

Note that resetting the SMC does not reset the PRAM. Resetting the SMC will not resolve issues in which your computer is unresponsive—in these situations, restarting your computer will generally suffice. If your computer isn't responding, perform these steps one at a time, in this order, until the issue has been resolved:

1. Force Quit (Option-Command-Escape).
2. Restart (Control-Command-Power).
3. Force Shut Down (press the power button for 10 seconds).

Resetting the SMC can resolve some computer issues such as not starting up, not displaying video, sleep issues, fan noise issues, and so forth. If your computer still exhibits these types of issues after you've restarted the computer, try resetting the SMC.

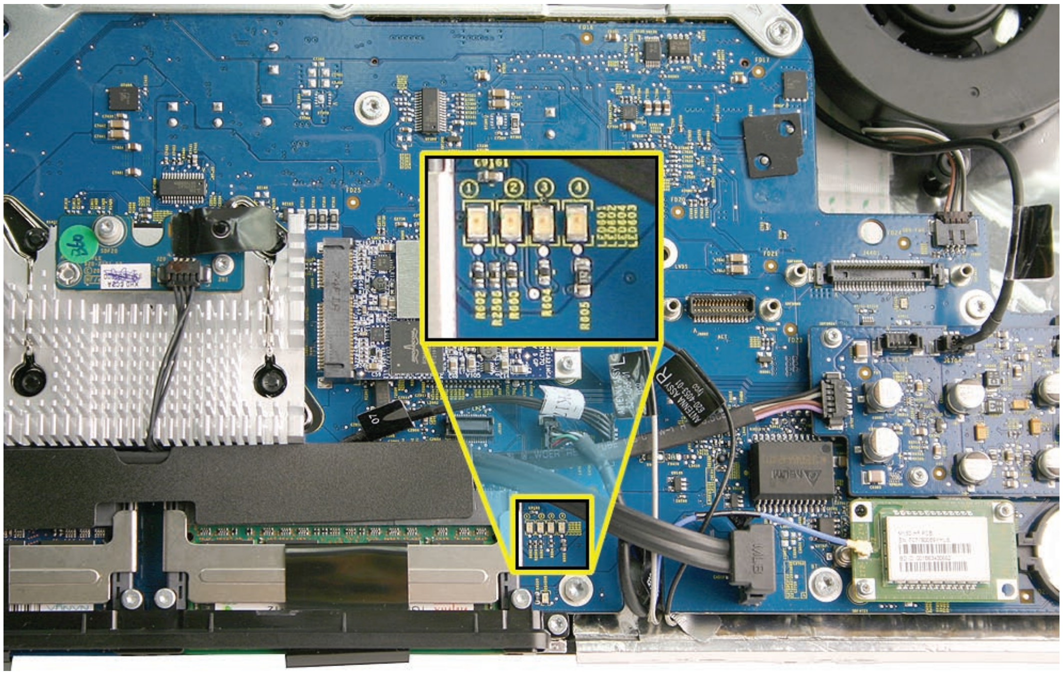
To reset the SMC on an iMac (24-inch 2007)

1. From the Apple menu, choose Shut Down (or if the computer is not responding, hold the power button for approximately ten seconds until it powers off).
2. Unplug all cables from the computer, including the power cord.
3. Wait at least 15 seconds. The SMC reset occurs automatically once the iMac has been unplugged from the AC power source for several seconds.
4. Plug the power cord back in, making sure the power button is not being pressed at the time.
5. Reconnect your keyboard and mouse to the computer.
6. Press the power button on the back to start up your computer.

Note: The iMac (24-inch) does not have a button on the main logic board for resetting the SMC, which eliminates the need to remove the computer's cover to reset it (as required for some other models).

Diagnostic LEDs

The iMac (24-inch 2007) has four built-in diagnostic LEDs on the main logic board that can help you to troubleshoot the computer. The four LEDs are located to the right of the memory slot. It may be necessary to carefully move the hard drive data cable to view the LEDs.



To Access the LEDs:

1. Follow the take apart instructions to remove the memory **access door** and **front bezel**.
2. The four troubleshooting LEDs 1, 2, 3, and 4 (numbered bottom to top) are in a column located to the right of the memory slot. Move the hard drive data cable to view the LEDs.

LED #1

- Indicates that the trickle voltage from the power supply has been detected by the main logic board. This LED will remain ON whenever the iMac (24-inch) is connected to a working AC power source. The LED will remain on even when the computer has been shut down or put to sleep. The LED will turn off only if the AC power source is disconnected or the power supply is faulty.

LED #2

- Indicates that the main logic board has detected proper power from the power supply when the computer is turned on. This LED will be ON when the computer is turned on and the power supply is working correctly.

LED #3

- Indicates that the computer and the video card are communicating. This LED will be ON when the computer is communicating properly with the video card. If LEDs 1 and 2 are ON and you heard the startup sound, but LED 3 is OFF, then the video card might be installed incorrectly or need replacement.

LED #4

- Indicates that the computer and the LCD display panel are communicating. This LED will be ON when the computer is turned on and video signal is being generated. If the LED is ON and there is no image on the LCD display panel, the LCD display panel or inverter might be installed incorrectly or need replacement.

Symptom Charts

How to Use the Symptom Charts

The Symptom Charts included in this chapter will help you diagnose specific symptoms related to the product. Because cures are listed on the charts in the order of most likely solution, try the cures in the order presented. Verify whether or not the product continues to exhibit the symptom. If the symptom persists, try the next cure.

Note: If a cure instructs you to replace a module, reinstall the original module before you proceed to the next cure.

Power Issues

No Power

The computer will not turn on. The display remains black and there are no sounds from the fans or drives.

1. Verify the power outlet is good. Plug a different device into the socket to ensure there is power, or plug the iMac into another outlet. Does the iMac power on now?

   Yes: Resolved. Bad outlet.

   No: Go on to the next step.

2. Check the power cord. Use a known good power cord. Does the iMac power on now?

   Yes: Your power cord has failed. Replace the AC power cord.

   No: Go on to the next step.

3. Check the connection of the power cord on both ends. Verify that the power cord is securely plugged into both the AC outlet and back of the computer. Does the iMac power on now?

   Yes: You may have a loose fit to your power cord. Replace the AC power cord and test.

   No: Go on to the next step.

4. Follow instructions in the General Information chapter to **reset the SMC**. Does the iMac power on now?

   Yes: Issue resolved.

   No: Go on to the next step.

5. Remove and reinstall the SO-DIMM memory modules, located in the bottom of the computer. Does the iMac power on now?

   Yes: Issue resolved.

   No: Go on to the next step.

6. Remove the memory access door and front bezel to gain access to the four diagnostic LEDs. See "**Diagnostic LEDs**" in the General Information chapter for complete instructions on this procedure.

7. Plug the power cord into the iMac and the power cord into the AC outlet. Check to see if LED #1 is On or Off.

   LED #1 is On: This indicates that the power supply is getting good power from the AC outlet. Go on to the next step.

   LED #1 is Off: This indicates that the computer is not detecting AC power. If both the AC outlet and the power cord are good, replace the AC/DC power supply. If the issue persists, replace the AC line filter.

8. Press the power button. Check to see if LED # 2 comes On, comes on momentarily, or stays Off.

LED # 2 is On: The Power Supply is functioning. Go on to the next step.

LED # 2 comes on momentarily or stays Off: Replace the Power Supply.

9. At this point in the Power On process, you should hear a boot chime and see that LED #1 and #2 are On. Do you hear a boot chime?

Yes: The power systems of the computer are working correctly. See "Troubleshooting No Video" in this chapter.

No: The logic board is not passing the Power-On Self Test (POST). Replace the SDRAM with known-good memory and test. If the issue persists with known-good SDRAM, replace the logic board.

No Video

No Video, No Boot Chime

The computer will turn on (indicated by the front LED ON), but there is NO boot chime and No Video on the display. The faint sound of the fans, hard drive, and optical drive may also be heard.

1. Follow instructions in the "General Information" chapter to **reset the SMC**. Does the computer display video after successfully resetting the SMC?

Yes: Problem solved.

No: Continue to next step.

2. Verify that only supported SDRAM memory has been installed and that it has been installed correctly. Unsupported and/or defective memory can prevent the computer from booting. It may be necessary to install known good memory for testing purposes and replace any unsupported or defective SO-DIMM's identified during this process. Does the computer display video after verifying and/or replacing the memory with known good memory?

Yes: Problem solved. Verify full system functionality before return the system to the customer.

No: Replace the logic board.

No Video, Boot Chime heard

The computer will turn on, the boot chime can be heard and activity from the fan or drive can be heard, but the display has no picture or color.

1. Check if the computer is sleeping. Press the space bar to wake the computer from sleep mode. Did the computer wake from sleep?

Yes: Put the computer to sleep from the Apple menu and wake the computer again to test. Check Energy Saver setting to see when the computer has been designated to sleep.

No: Continue to next step.

2. Reset your computer's PRAM (Parameter RAM):

- If your iMac is on, turn it off by holding the power button until the unit powers off. You should hear the fans go quiet.
- While the computer is off, with your left hand, hold down the Apple key, the Option key next to it, and the letter "R" key on the keyboard. When you have these keys all pressed down, push the power button with your right hand and then quickly move that hand to hold down the letter "P" on the keyboard. Keep these four keys pressed while the computer starts up.
- Make sure you hold down the four keys (P - R - Apple - Option) while the computer is starting up. When you hear the computer's start up chime for the second time, you can let go of the keys on the keyboard.
- If you didn't hear at least two startup chimes, go to the top of this section and begin again. It's important that you hear two startup chimes when performing this procedure. This indicates that you have successfully reset the computer's PRAM (Parameter RAM).

3. Does the computer display video after successfully resetting the computer's PRAM?

Yes: Restart the computer from the Apple menu and make sure the computer is now working correctly.

No: Continue to next step.

4. Make sure the machine is powered off, and remove the access door and front bezel to access the diagnostic LEDs. Plug in and start up the computer to observe the diagnostic LEDs. At this point in the Power On process, you should hear a boot chime, and LED #1 and #2 are On. Is LED #3 On or Off?

LED # 3 is On: The video card and logic board are communicating properly. Go to the next step.

LED # 3 is Off: The video card and logic board are not communicating. Replace the video card. If the issue persists, replace the main logic board.

5. LED #4 should be On when the video card and LCD display have communicated properly to produce a video image. Is LED #4 On or Off?

LED # 4 is On: The video card and LCD display have communicated to LCD video. In this case, there is a problem with the backlights in the panel or the inverter. Verify the inverter cable is plugged into the inverter and to the AC/DC power supply. Replace the the LCD panel if the problem persists.

Replace the LCD display which replaces both the backlights and the inverter.

LED # 4 is Off: The video card and logic board are unable to communicate to generate video. Replace the video card. If the issue persists, replace the LCD display.

6. Unplug the iMac and remove the SDRAM. Replace with known good SDRAM. Plug the iMac back in and power the unit on. Does the front LED go off after a few moments now?

Yes: Replace the original SDRAM and test again. If the front LED does not go off with the only the original SDRAM installed, replace the SDRAM. If the LED is now reliably going off after a few moments, but yet you still do not have any video, go to step 7.

No: If the LED remained on, the main logic board is not communicating with the LCD panel to generate video. Replace the main logic board.

7. If video is displayed normally on an external display but not on the iMac internal display panel, replace the LCD display.

Display is tinted another color.

1. The iMac (Mid 2007) computer has a tinted glass panel covering the display, giving it a new look from previous models. Make sure this not what the customer is referring to.
2. Reset the parameter RAM. Press the Command-Option-P-R keys. When you keep all the keys held down, you will hear the startup chime over and over again (about every ten seconds) until you let go. After you hear the second chime, you can let go of the keys.
   Does the computer display video after successfully resetting the computer's PRAM?
   Yes: Problem resolved. Restart the computer from the Apple menu and make sure the computer display is no longer tinted another color.
   No: Continue to the next step.
3. Connect an external monitor to the mini-DVI port. Does the external display exhibit the same color tinting?
   Yes: Replace the video card.
   No: Check the LVDS cable connections. If connected properly and the same color tinting persists, replace the LVDS cable. Does color tinting persist after changing the LVDS cable?
   Yes: Replace the LCD display panel.
   No: Problem solved. Restart the computer from the Apple menu and make sure the computer display is no longer tinted another color.

Display

When displaying a single color over the screen area, the LCD panel shows one or more pixels that are not properly lit.

Active-matrix LCD technology uses rows and columns of addressable locations (pixels) that render text and images on screen. Each pixel location has three separate subpixels (red, green, and blue) that allow the image to be rendered in full color. Each subpixel has a corresponding transistor responsible for turning the subpixel on or off.

There are typically millions of these subpixels on an LCD display. For example, the LCD panel used in the Apple Cinema HD display is made up of 2.3 million pixels and 6.9 million red, green, and blue subpixels. Occasionally, a transistor does not work perfectly, which may result in the affected subpixel being turned on (bright) or turned off (dark). With the millions of subpixels on a display, it is quite possible to have a low number of faulty transistors on an LCD. Therefore, a certain number of subpixel anomalies is considered acceptable. Rejecting all but perfect LCD panels would significantly increase the retail price for products using LCD displays. These factors apply to all manufacturers using LCD technology—not just Apple products.

To determine whether or not the display has an acceptable number of pixel anomalies, follow the steps below:

1. Set the display image to one of the following colors: all-white display, all-red display, all-green display, or all-blue display.
2. Using a jeweler's loupe, pocket microscope, or other magnifying device, identify and count each subpixel anomaly:
   - Bright subpixel anomaly = subpixel that is always on
   - Dark subpixel anomaly = subpixel that is always off
3. **Important:** Check the number of subpixel anomalies with the following chart:

LCD Size (inches)	**Acceptable Number of Subpixel Anomalies**			**Replace the Display**		
	Bright	Dark	Both	Bright	Dark	Both
24	up to 8	up to 10	up to 15	9 or more	11 or more	16 or more

4. If the number of subpixel anomalies exceeds the acceptable number listed in the chart, replace the LCD panel.
5. If the number of subpixel anomalies is acceptable, explain to the customer that the pixel anomalies are within specifications, and no repair is necessary.

Important: Do not release the specifications to customers. Instead, inform them that a certain number of subpixel anomalies is considered acceptable, and these factors apply to all manufacturers using LCD technology—not just Apple products.

Hard Drive

Flashing question mark, or an alternating question mark and Mac OS (face or a folder)

Note: When troubleshooting hard drive problems it is a good idea, if possible, to back up any important data. Some troubleshooting steps may require erasing the contents of the hard drive.

1. Boot from the system CD that came with the computer, and open Disk Utility. Does the hard drive show in Disk Utility?
   Yes: Run Repair Disk and Repair Permissions to correct any directory and permissions issues. Go on to Step 2.
   No: Go to Step 3.

2. Did Disk Utility successfully repair directory or permissions?
   Yes: Restart the computer to the hard drive. Go on to Step 3.
   No: Go to Step 3.

3. Did the computer successfully start to the internal Hard Drive?
   Yes: Run Apple Hardware Test version 3A126 or later for this machine and return to the customer if it passes.
   No: Boot the machine to Apple Hardware Test, version 3A126 or later, or to Apple Service Diagnostic version 3S116 or later.

4. Did the machine successfully boot to the Diagnostic?
   Yes: Run the test suites.
   No: Make sure you're using the correct version of the Diagnostic, and that the disc is able to boot another machine that it supports. If so, then try booting from an external optical drive. If this is successful, you should replace the optical drive and retest the machine booting to the diagnostic disc.

5. Did the tests pass?
   Yes: Reinstall the System Software that came with the computer and test.
   No: Replace the component (s) indicated by the test results.

Hard Drive Issues

Note: The following information is for Intel-based and PPC Macintosh drive compatibility

- Drives to be used in booting Intel-based Macintosh hardware should be formatted and partitioned with an Intel-based Macintosh disk utility running on Intel-based Macintosh hardware. That should ensure you get the correct default partition map and structure for reliable booting.
- Intel-based Macintosh CPUs in Target Disc Mode will only mount on PPC machines running Mac OS X 10.4.10 or later, and may show one contiguous partition rather than separate partitions on the host machine.
- Always make sure to use the OS that came with the machine if you need to reinstall software (ask the customer for the discs if necessary), and the diagnostics specifically designated for that hardware.

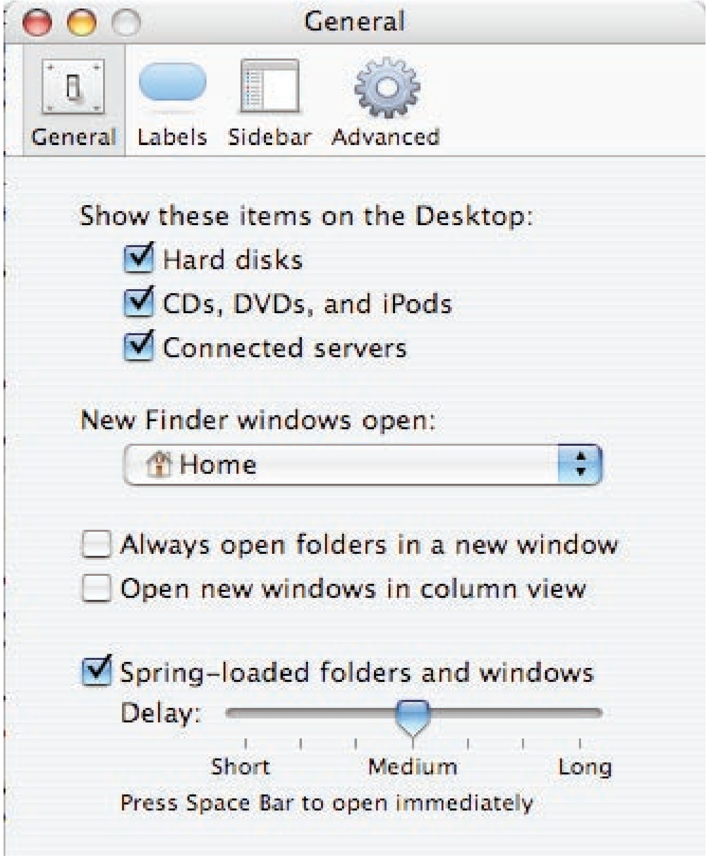
System hangs during normal startup process.

1. Boot from the system CD that came with the computer. Use Disk Utility to verify the hard drive.
2. Using Disk Utility, reformat the hard drive.
3. Check all cable connections to and from the hard drive.
4. Replace the hard drive data cable.
5. Replace the hard drive.
6. Replace the logic board.

Optical Drive

CDs or DVDs don’t show up on the Desktop.

1. Select Preferences from the Finder menu and make sure the option to show CDs, DVDs and iPods is checked: in the General window as shown below.


General
General
Labels
Sidebar
Advanced

Show these items on the Desktop:

☑ Hard disks
☑ CDs, DVDs, and iPods
☑ Connected servers

New Finder windows open:
Home

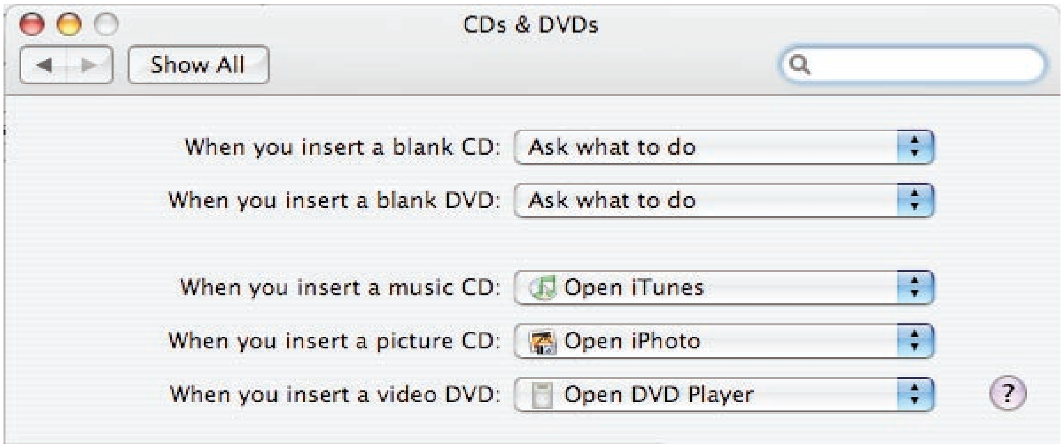
☐ Always open folders in a new window
☐ Open new windows in column view

☑ Spring-loaded folders and windows
Delay: Medium

Short
Medium
Long

Press Space Bar to open immediately

2. Select System Preferences from the Apple menu and open the CDs & DVDs preferences window. Make sure that audio CDs are set to launch iTunes and movie DVDs set to launch DVD Player when those media are inserted, as shown below.



When you insert a blank CD: Ask what to do

When you insert a blank DVD: Ask what to do

When you insert a music CD: Open iTunes

When you insert a picture CD: Open iPhoto

When you insert a video DVD: Open DVD Player

3. Check that the drive can read discs normally. Insert an audio CD and check whether it shows up on your desktop or launches iTunes.
   Does the audio CD mount on the desktop or in iTunes?
   Yes: The drive seems to read CD discs okay. Go on to Step 4.
   No: Make sure the disc is readable by other computers. Try other CD discs. If none mount or no audio CDs launch iTunes, replace the optical drive."

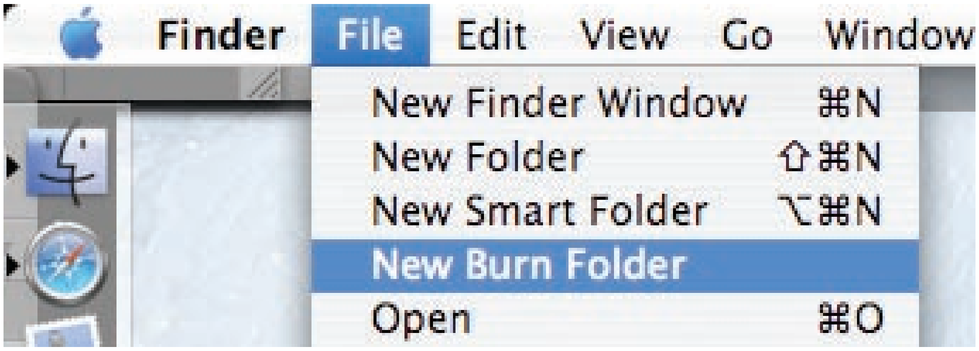
4. Eject the audio CD and insert the iMac Software Install and Restore DVDs that came with the customer's computer, or insert a DVD movie.
   Does this disc show up on the desktop, or does the movie launch DVD Player?
   Yes: The computer is reading CD and DVD media. This may be related to a specific disc or discs the customer is using and you should examine those discs.
   No: The optical disc is reading CD media, but not DVD media. Try other DVD discs. If none mount or movie DVDs do not launch DVD Player, replace the optical drive adapter board

5. If after replacing the optical drive adapter board the drive still won't mount any optical media, replace the optical drive. If the issue persists, then replace the logic board.

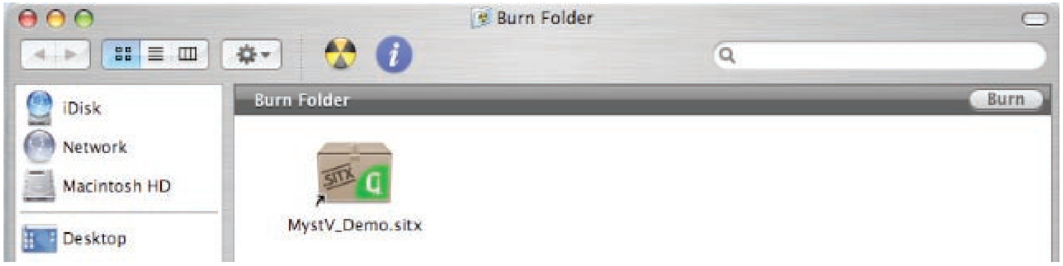
The computer won't burn discs.

1. Check whether the drive can read CDs and DVDs normally. Perform the steps above for "CDs or DVDs don't show up on the Desktop."

2. Try a test burn by creating a Burn Folder, as follows.
   - In the Finder, choose "New Burn Folder" from the File menu.


Finder
File
Edit
View
Go
Window
New Finder Window ⌘N
New Folder ⇧⌘N
New Smart Folder ⌥⌘N
New Burn Folder
Open ⌘O

   - Open the Burn Folder, drag an item inside for testing, and click "Burn" in the upper right corner of the window.


Burn Folder
iDisk
Network
Macintosh HD
Desktop
Burn Folder
Burn
MystV_Demo.sitx

   - When prompted, insert a blank disc and follow the dialog instructions.

   Does the disc burn successfully (problem solved), fail with an error, or is the disc ejected?

3. If the disc fails to burn with an error, check for these error messages.
   Unknown Error -2147352480. See Knowledge Base article 25480 and 25750 for more information.
   Buffer underrun error. See Knowledge Base articles 25480 and 25750 for more information.
   Unknown Error. If you see "Unknown Error" without "-2147352480", you will want to see Knowledge Base article 152224 for more information.

4. If the blank disc is ejected, try another blank disc. If the issue persists, try another brand and speed of blank media; if you're using blank CD media, see if this happens with blank DVD media. If the drive consistently rejects all blank media, or only rejects blank CD media while accepting blank DVD media or vice versa, replace the optical drive adapter board and test. Does the drive successfully burn to disc after replacing the optical drive adapter board?
   Yes: Problem solved.

No: Replace the optical drive. Does it burn correctly now?
  Yes: Problem solved.
  No: Replace the logic board.

Discs won't insert.

1. Make sure that when inserting a disc, to use a continuous motion to push the disc into the drive. Keep pushing the disc until your finger touches the side of the iMac.
2. Is there a disc already in the drive?
   Yes: Eject the disc before inserting another. Refer to Knowledge Base article **51008** - "iMac: If You Can't Eject a CD or DVD, or Open the Drive Tray". If none of these options will eject the disc, you may have to disassemble the drive to recover the disc. See Knowledge Base article **86382** - "Macintosh: How to Remove a Stuck Disc From a Slot-Loading Drive."
   No: Reseat the optical drive. Perform the "Optical Drive" procedure in Take Apart to reseat the drive in the mounting aperture and reconnect the optical drive to the logic board.
3. After reinstalling the optical drive, can you now insert a disc?
   Yes: Issue resolved. Run diagnostics and return the system to the customer.
   No: Replace the optical drive adapter board.
   Yes: Problem solved. Run diagnostics and trying inserting a disc again.
4. After replacing the optical drive adapter board, can you insert a disc now?
   Yes: Issue resolved. Run diagnostics and return the system to the customer.
   No: Replace the optical drive.

Optical disc constantly ejects.

1. Disconnect all peripheral devices, especially the mouse in cases where the disc is constantly ejecting. Retest. If the issue is resolved, reconnect peripherals one-at-a-time until faulty peripheral is identified.

2. Try cleaning the disc. If the disc is dirty or scratched, it may not mount.
   Is the issue resolved?
   Yes: Problem solved.
   No: Try a different disc. If the issue persists, go on to the next step.

Boot from Apple Service Diagnostic disc version 3S116.
Does the unit pass the tests?
Yes: Restart to the internal hard drive and test again.
No: Replace the component (s) indicated by the test results. If you cannot boot to Apple Service Diagnostic disc because it ejects, go on to step 4.

3. Boot from the system install DVD (use Startup Manager, hold down the Option key at startup). If you can boot from this volume, perform an Archive and Install with the Install DVD that came with the computer and test.
   Is the issue resolved?

4. **Yes:** Problem solved.
   No: If you cannot boot to Apple Service Diagnostic disc or to the Install DVD because they eject, reseat the optical drive adapter board to the logic board and retest.

5. Replace the optical drive adapter board.

6. Replace the optical drive.

7. Replace the logic board

Fan Sound

Fans running at full speed after the computer turns on

The customer may have entered a diagnostic mode that causes the fans to run at full speed.* Restarting the system will not restore normal fan operation. To solve the problem, the user or technician should do the following:

1. Shut down the system.
2. Disconnect the power cord and wait 15 seconds.
3. Reconnect the power cord and wait 5 seconds.
4. Power on the system.

***Note**: Customers reporting this symptom should be told to press the power button AFTER the power cord has been fully inserted. Inserting the power cord while pressing the power button will cause the fans to run at full speed.

Loud fan noise coming from inside the computer

The iMac has a trio of fans that circulate air throughout the system. It also includes temperature sensors, and advanced thermal software that spins the fans fast or slow as needed. As the system usage increases, the fans will adjust their speed using advanced thermal software to meet the cooling needs of the system.

Under normal conditions, rotating fans will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. In addition, the normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with your computer.

To begin troubleshooting a possible fan issue, we need to qualify the sound that you're experiencing.

1. Does the sound occur only under specific light/heavy usage conditions?

   Yes: CPU intensive applications such as iTunes, Garage Band, DVD Player, etc., or two or more applications open at once will cause the fans to run at an increased rate making them more noticeable. If the sound only occurs when one or more of these applications is running, this is normal.

   No: If the sound isn't affected by CPU intensive application it may be due to other factors. Go on to the next step.

2. Is the sound always present, or does the sound vary?

   The sound is always present: The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. Check whether this sound is related to one of the components. Go to step 4.

The sound varies: Under normal conditions rotating blowers will make a slight hum that varies in relationship with their rotational speed and the amount of air that they are moving. Let's see if this is indeed the case. Go to Next Step.

3. Are the fans making a normal humming sound that increases/decreases in relation to processor usage? As the fans increase their speed to cool the system the sound level will increase.

   Launch the Activity Monitor application included with Mac OS X in the Utilities folder to determine whether the noise corresponds with heavy usage of the CPU. Does fan activity increase / decrease with the CPU Usage graph in Activity Monitor? Check by running CPU intensive applications such as iTunes.

   Yes: This is normal operation and none of the fans require replacement.
   No: If the fan activity does not coincide with CPU usage, the sound you're hearing may not be fan activity. Go to the Next Step.
4. The normal functioning of the hard drive and optical drive will generate additional whirring and scratching noises that may be audible. We can isolate these noises by booting the computer to the iMac Install Mac OS X Install Disc 1.

   - Place the disc in the drive, and restart your machine while holding down the "C" key as the machine starts up.

   - Once at the Installer window, choose Open Disk Utility from the Installer Menu.

   - Once Disk Utility is open, select the system's hard drive and on the toolbar choose Unmount. **Note:** if the drive has multiple partitions, unmount each of these partitions. This will spin down the hard drive. The optical drive will also be busy at this time; wait a moment for the optical drive to spin down also and then listen to the machine.

   Is the sound still present?

   Yes: With the hard drive and optical drive inactive, all you should be hearing are the fans in the machine. While booted to the CD, these fans should be running at a lower level since CPU activity is low with both drives inactive. Fan sound that includes objectionable ticking, whistling, or squealing may require further investigation and/or replacement of the particular fan. Go on to the next step.

   No: The normal functioning of the hard drive and optical drive will generate additional whirring and scratching sounds that may be audible. All of these sounds are normal and do not indicate a failure with the machine. If you wish to check the health of the hard drive, see Knowledge Base article 152349, "Replacing a disk before it fails."
5. Shut down the computer, remove the power cord and any other connected cables, and

remove the access door, front bezel, and EMI shield.
Stand up the computer, plug it in, and start it up by pressing the external power button.

As the machine starts up, listen carefully to each of the three fans, and see if you can locate the fan from which the objectionable ticking, whistling, or squealing sound is coming. The CPU fan is the left-most fan, the hard drive fan is in the center, and the optical drive fan is on the right.

Can you pinpoint the fan making the sound?

Yes: Replace the noisy fan.

No: If you can hear an objectionable ticking, whistling, or squealing sound, but you cannot identify the source of the sound, contact Apple Technical Support.

Audible buzzing, whining, or ticking noise.

The iMac contains several mechanical devices such as motors and fans that may make audible buzzing, ticking, or whining noises when they are operating in a normal manner. The sounds will vary depending on how the system is used.

When troubleshooting abnormal noises try the following:

1. Verify that the computer is running a supported version of the Mac OS X operating system. If an earlier version of the operating system has been installed then the fans may run at excessive speeds.
2. Determine that this noise is related to the computer by removing and shutting down all other devices in the vicinity of the computer that could be causing a sound.
3. Eject any media inserted into the optical drive. The optical drive will make a variety of normal sounds when accessing the optical media.
4. Quit all applications and test the computer again. Processor intensive applications may cause the fans to run at a higher RPM and therefore be more audible.
5. Boot to the latest version of Apple Service Diagnostic for iMac (24-inch) and select the EFI test suite by holding down the D key during startup. The diagnostic tests fan speeds and thermal sensor functionality. Should tests fail, replace any parts indicated by the diagnostic.
6. Reboot the computer and check the computer again. If the noise persists and is unusually loud, contact Apple Technical Support.

Fans are running at a constant high speed.

If the fans on the system are running at a constant high speed, or ramp very quickly to high speed and do not vary once this speed is reached, the fans are most likely receiving incorrect thermal input. Follow these steps:

1. **Reset the SMC** and then test to see if the fans still exhibit the issue.
2. Boot to the EF1 tests of the latest version of Apple Service Diagnostic, version 3S116 This will test the fans and thermal input of the sensors. If the tests fail, replace the component (s) indicated by the test.

AirPort

Not able to connect wirelessly with AirPort

1. From the Apple menu, choose About this Mac.

2- Click on More Info. System Profiler should open.

3- In System Profiler, in the column on the left, look under Network for a line called "AirPort Card". Select that line.

4- Does the section to the right say "No Information Found"?

> **Yes:** The computer doesn't realize it has an AirPort card installed. Go to step. 5
>
> **No**: The iMac recognizes that it has an AirPort card installed. Go to step 6.

5- Remove the access door, front bezel, right speaker, and two card mounting screws, and reseat the AirPort card. Re-install the two card mounting screws and check System Profiler again to see if the computer sees the AirPort card. Does it recognize the card now?

> **Yes**: Problem solved. Replace the lower EMI shield and front bezel and re-test the system to verify that the original symptom is resolved.
>
> **No**: Replace the AirPort card. Refer to the Take Apart section for AirPort Card. If the issue persists after replacing the AirPort card, replace the logic board.

6- Now that we know the iMac recognizes the AirPort card, check the antenna cables. If the antennas are not plugged in all the way, you may have a very short AirPort range.

7- Remove the access door, front bezel, right speaker, and two card mounting screws. Disconnect the card, and reconnect the antenna cable connectors to the card. Make sure the antenna connectors are firmly seated. Replace the card and other components and retest.

8- If the antennas are plugged in properly and the AirPort card is recognized but the problem persists, there are a number of other things that could cause issues with wireless networking. Refer to Knowledge Base document **106858** for more networking information.

9- Replace the AirPort card.

10- Replace the AirPort antennas.

11- Replace the logic board.

Bluetooth

Bluetooth devices won't sync with my computer

1. Make sure the computer has a Bluetooth board installed. Open System Preferences (from the Apple menu, choose System Preferences) and verify that "Bluetooth" appears in the Hardware section of the window.

2. Locate the Bluetooth board inside the computer. Reseat the Bluetooth board and the Bluetooth antenna.

3 Turn on Bluetooth. In System Preferences, click Bluetooth and then click the Settings tab. If you don't see "Bluetooth Power: On," click the "Turn Bluetooth On" button. Make sure that you also enable Bluetooth on your device too (please refer to your device's documentation for instructions).

4 Set up a new device. To set up a Bluetooth phone or PDA, click the Devices tab in Bluetooth preferences and then click "Set Up New Device" to open the Bluetooth Setup Assistant. Follow the onscreen instructions to set up your device. To set up an Apple Wireless Keyboard and Mouse, open System Preferences, click Keyboard & Mouse, click the Bluetooth tab, and then click "Set Up New Device" to open the Bluetooth Setup Assistant. Follow the onscreen instructions to set up your keyboard and mouse.

5 Recharge or replace your Bluetooth device's battery. If your Bluetooth device's battery is low, you may experience connection issues.

6 Download and install the latest software for the device.

7 Check for a Bluetooth update. Choose Software Update from the Apple menu (make sure that your computer is connected to the Internet). If newer Apple Bluetooth software exists, Software Update will find it.

8 Check for signal spoilers. Avoid situations in which metal objects come between your device and computer. Don't put the computer under a metal desk or locked away behind a metal cabinet. Keep cordless phone base stations, microwave ovens, and other electrical devices that operate on a 2.4 GHz bandwidth away. And make sure that the device and computer aren't more than 30 feet apart from each other.

9 Restart your computer. You may also want to try resetting your computer's PRAM and NVRAM.

10 Reset your Bluetooth device. First try turning your device off and then on again. If that doesn't work, see if you can reset your device.

11. Replace the Bluetooth board and test the computer again.

12. Refer to the Bluetooth Support site at **http://www.apple.com/support/bluetooth/**.

13 Replace the logic board.

IR Remote

Remote won't communicate with system applications such as iTunes or iPhoto, or with the optical drive.

Make sure of the following when using the Apple Remote:

- You are within 30 feet of the front of the computer.
- You have an unobstructed line-of-sight to the front of the computer.
- You are pointing the lens end of the Apple Remote directly at the front of the computer.
- The computer is powered on and awake.
- The "Disable remote control infrared receiver" checkbox in the Security pane of System Preferences is NOT checked.
- Make sure the active application works with Apple Remote. Apple Remote uses Front Row, and from Front Row it can access DVD Player, iPhoto, iTunes, and QuickTime Player.
- Make sure the remote is paired with the computer. Access the System Preferences/Security pane and check "Unpair" if available. Close the Security pane, and re-pair the Apple Remote with the computer. See Knowledge Base article **302545**.

1. Use a digital camera to test your Apple Remote.
   If you have a digital camera or DV camera with an LCD display, you can use it to see if your Apple Remote is emitting a signal. Infrared beams are invisible to the human eye, but most digital cameras and video cameras use Charged-Coupled Device (CCD) chips or image sensors that are sensitive to infrared light.

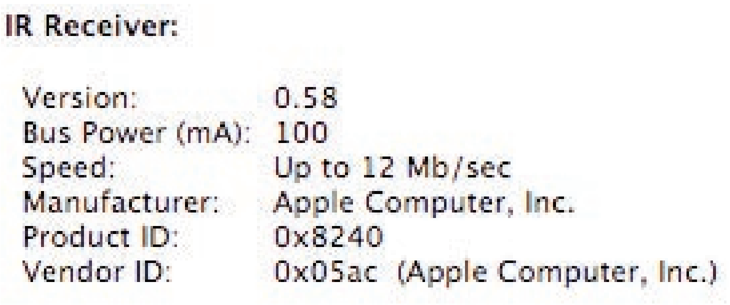
   To use a camera to test your Apple Remote, follow these steps:
   • Turn on your digital camera or DV camera and remove any lens cover.
   • Point your Apple Remote toward the camera lens.
   • Press and hold the Menu button on the remote while looking at your camera's LCD display.
   Note: you can also use the iMac's built-in camera to verify the remote using the PhotoBooth application, however if the IR sensor and remote are not functioning correctly, then pushing the buttons on the remote may activate the FrontRow features during the testing.
   • If you see a faint blinking light coming from the Apple Remote in the camera's LCD, then the remote is working properly.
   • If you don't see any blinking light in the camera's LCD, replace the battery in your Apple Remote and then test it again with your computer (see "iMac G5 (iSight): How to replace the Apple Remote battery" for instructions). (KBase article **302543**)

2. Does the IR remote now communicate with an active application that works with Apple Remote?
   Yes: IR remote is functioning correctly.
   No: Replace Apple Remote.

IR Sensor/Receiver

Supported applications do not respond to input from the remote control.

1. Perform the checks above under "IR Remote" to verify that the Apple Remote is functioning correctly, and retest. Do supported applications now respond to input from the IR remote?
   Yes: Problem resolved.
   No: Go to the next step.
2. Verify that the IR Sensor can be seen in the Apple System Profiler. Open the Apple System Profiler and click on the "USB" section. You should see the following listed:



```
IR Receiver:

  Version:           0.58
  Bus Power (mA):    100
  Speed:             Up to 12 Mb/sec
  Manufacturer:      Apple Computer, Inc.
  Product ID:        0x8240
  Vendor ID:         0x05ac  (Apple Computer, Inc.)
```

   Do you see the IR Receiver listed under the USB section of the Apple System Profiler?
   Yes: Go on to the next step.
   No: Replace the IR cable and retest. Refer to the "IR Board" take apart procedure
   Do supported applications now respond to input from the IR remote?
      Yes: Problem resolved.
      No: Replace the IR sensor board and retest. Refer to the "IR Board" take apart procedure.
   If the issue persists after replacing these parts, replace the logic board.
3. Access System Preferences and click Security. In the Security pane check the following:
   • Make sure "Disable remote control infrared receiver" checkbox is not checked.
   • If "Unpair" is available in the Security pane of System Preferences, another Apple Remote may be paired to the computer (pairing allows only one Apple Remote to control the computer). To delete a pairing between the remote and the iMac G5 (iSight), click Unpair. (You may have to enter your Administrator password to make changes in the Security pane.) After making sure these features are disabled, does the Apple Remote control the machine now?
   Yes: Problem resolved.
   No: Replace the IR sensor board and retest. Refer to the "IR Board" take apart procedure.

Built-in iSight Camera

The built-in camera is not recognized.

1. Boot the computer to the desktop and launch iChat AV. **Note**: You do not need to be connected to a network to use iChat AV to troubleshoot. Verify that the correct versions of Mac OS X and iChat AV are installed. Reinstall or update software as needed.
2. Open the iChat AV preferences and click on the 'Video' icon. Verify whether the camera is recognized by the iChat AV software. Is the camera recognized?

   Yes: the camera is recognized and video preview is normal: This indicates the camera is functioning. Pull down the 'Video' options from the menu bar and verify that the camera is enabled. The camera must be enabled to function.

   No: the camera is not recognized and no video preview is visible. This indicates the camera may not be functioning properly. Open the iMac and inspect the camera board (inside the front bezel) and the attached cable. Reseat the cable on the camera board and check the other end of the camera cable connections to the logic board. The camera cable connectors are on the right side of the logic board, below the optical drive and to the right of the fan. Go on to the next step if this didn't solve your problem.
3. Replace the camera board.
4. Replace the camera cable.
5. If the iSight camera still doesn't appear in System Profiler on the USB bus after replacing the camera board or camera cable, replace the logic board.

Camera recognized but no video.

1. Verify that the lens assembly for the iSight camera located in the top middle of the front bezel is not obstructed by anything including Post-It notes or other objects.
2. Replace the camera board in the front bezel and retest.

Camera image quality poor.

The built-in camera is recognized by iChat AV and other supported video applications however the image quality is poor.

1. Verify that the lens assembly for the iSight camera is clean. Fingerprints and other contaminants can affect image quality. Clean the lens using a lint free lens cleaning cloth being while being careful not to scratch the lens.
2. Verify that there is sufficient lighting to produce a good quality image. Lighting which is comparable to that found in a well lit office will product a good quality image. If possible, avoid having a brightly lit background. Diffused lighting is preferred over direct lighting.
3. Launch iChat AV and open the iChat AV preferences. Click on the 'Video' tab. Is the video quality acceptable?
   Yes: The camera is functioning normally. The image quality problems may be caused by

bandwidth limitations when using iChat over the internet. Instruct the customer to use the iChat AV connection doctor feature to verify that there is sufficient bandwidth to have a video iChat session without a significant degradation of image quality.

No: The camera may not be functioning normally. Replace the front bezel for poor image quality. If the issue persists, replace the camera board and retest.

Camera recognized but no audio.

1. Open the System Preferences window and click on Sound.
2. Verify that the built in iSight camera has been selected as the device for sound input.
3. Verify that the volume settings (on the slider bar) are appropriate.
4. Launch iChat AV and open the iChat AV preferences. Click on the 'Video' icon. Speak into the microphone while monitoring the microphone level indicator. Does the line level meter respond while you are speaking?

   Yes: The microphone circuit is functioning correctly. Check the preference settings of any supported AV applications the customer is experiencing problems with to make sure that the microphone feature is enabled and that the internal iSight microphone has been selected as the input device.

   No: Inspect the camera/microphone cable attached to the camera board inside the front bezel. If the cable is damaged, replace the front bezel and retest. If the issue persists, replace the camera/microphone cable.

Audio quality is poor.

The camera is recognized but the built-in microphone's audio quality is poor.

1. Open the System Preferences window and click on Sound.
   - Verify that the built-in camera has been selected as the sound input port.
   - Verify that the input volume settings are appropriate. Use the volume level meter to verify settings.
2. Open iMovie and create a new project. Click on the Audio button and record a sound sample. Is the sound quality acceptable?

   Yes: The microphone is functioning normally. The audio quality problems may be caused by bandwidth limitations when using iChat over the internet. Instruct the customer to use the iChat AV connection doctor feature to verify that there is sufficient bandwidth to have an audio iChat session without a significant degradation of audio quality.
   iChat AV allows the user to limit the allocated bandwidth which could impact audio quality. Check the settings and increase the bandwidth if needed.
   No: The microphone may be faulty. Replace the front bezel which houses the microphone.
3. Check connections on the Audio board. If the problem persists, replace the Audio board.

Speakers

Can’t hear sound from the speakers.

1. Disconnect any external microphones, speakers, or headphones.
2. Access System Preferences and select Sound. In the Sound pane, select Output and make sure the Internal speakers are selected as the device for sound output, the Output volume is adequate, and Mute is not selected. Do you have sound now?
   Yes: Problem resolved.
   No: Go to the next step.
3. Reset parameter RAM. Press Command-Option-P-R during startup but before “Welcome to Macintosh” appears. Do you have sound now?
   Yes: Problem resolved.
   No: Go to the next step.
4. Plug headphones or external speakers into the Line out /headphone port. Do you have sound through these devices when plugged in?
   Yes: Verify that the speaker cable connector is securely attached to the logic board. If the issue persists, replace the speakers.
   No: Replace the logic board
5. Verify that the speaker cable connector is securely attached to the audio board. Do you have sound now?
   Yes: Problem resolved.
   No: Replace the audio board. If the problem persists, replace the logic board

I hear sound out of only one speaker.

1. Are there any external microphones, speakers or headphones plugged into the iMac?
   Yes: Disconnect any external microphones, speakers, or headphones. Do you hear audio from both of the built in speakers on your iMac?
      Yes: Good. It looks like the built-in speakers are working properly. This may be an issue with the microphone, speakers or headphones that were plugged into your iMac. Please work with the manufacturer to troubleshoot this issue.
      No: Go to step 2.
   No: Check your speaker balance. If your balance setting was set to the left or right speaker, you would only hear sound from one speaker. Go to step 2.
2. Open System Preferences. (System Preferences can be found under the Apple menu.)
3. Click once on the sound icon. Click once on the Output tab.
4. Make sure your balance setting is in the middle. After adjusting the audio balance, do you have audio from both speakers now?
   Yes: It looks like the issue was the balance was not set properly.
   No: Replace the speakers.
5. If the speakers did not solve the problem, replace the logic board.

Mouse

The scroll bar on my mouse does not work in all directions.

See Knowledge Base article 302417, for instructions on how to clean the scroll ball.

My mouse doesn’t work at all.

1. Turn over the mouse and check the if the red LED on the underside of the mouse. Is the LED lit?

   Yes: The mouse has power. Try using the mouse on another surface. Non-reflective, opaque surfaces without repetitive patterns work best. The surface should be clean, but not shiny. Optical mice won’t work on glass, mirrored surfaces, glossy materials or mouse pads with pictures.

   No: There is no power to the mouse. Try plugging the mouse into one of the USB ports on the machine. If the mouse won’t power on from any USB port, try it on a known good machine. If the mouse fails to power on with known good machine, replace the mouse. If the mouse will power on with a known good machine, replace the main logic board.

2. If the underside LED is lit and the surface is good, and the mouse still does not track, try plugging the mouse into another USB port on the machine. Does the mouse track now?

   Yes: Issue resolved. Try the other USB ports on the system to make sure you don’t have a bad port.
   No: Try using a known good mouse. If a known good mouse resolves the issue, replace the mouse. If a known good mouse does not resolve the issue, replace the main logic board.

My mouse works intermittently (the cursor freezes randomly) or is slow to respond.

1. Try using the mouse on another surface. Non-reflective, opaque surfaces without repetitive patterns work best. The surface should be clean, but not shiny. Optical mice won’t work on glass, mirrored surfaces, glossy materials or mouse pads with pictures. Does the mouse track correctly on a proper surface?
   Yes: Issue resolved.
   No: Check the Mouse Tracking setting in the Mouse control panel.

2. Boot to another volume (like the System Install Disc). Does the mouse track properly now?
   Yes: Reinstall System Software
   No: Try a using a known good mouse. If a known good mouse resolves the issue, replace the mouse. If the issue persists with a known good mouse, replace the main logic board.

My Apple wireless mouse is slow or not tracking correctly.

Refer to Knowledge Base document 93369 - Apple Wireless Mouse is slow or not tracking smoothly.

Keyboard

Certain keys or none of the keys on the keyboard function.

1. Unplug all devices from your computer, including your mouse and keyboard as well as printer, scanner, external hard drives, and hubs. (Warning: Some devices may require you to perform steps before it is safe to unplug them, e.g., external storage devices.) Be sure to unplug your hub, if you have one.
2. Plug your keyboard into the back of your computer firmly and securely. Plug your mouse into the back of your computer firmly and securely. Take special care to make sure the connector is completely in the socket. Go on to step 3.
3. Does your keyboard work now?
   Yes: Problem solved.
   No: Unplug your keyboard and plug it into another USB slot on the back of your iMac. Does it work now?
      Yes: Replace the logic board.
      No: Unplug your keyboard and plug your mouse into the port the keyboard just occupied. Go on to step 4.
4. Does your mouse work now?
   Yes: Replace the keyboard.
   No: Replace the logic board.

My keys are sticky or slow to respond.

1. Try a known good keyboard.
2. Open System Preferences. Click on the keyboard and mouse icon. Adjust the "key repeat speed and delay until repeat" rate.
3. Replace the keyboard.

When I type, strange characters appear on the screen.

1. Depending on your iMac's settings, a simple keystroke can change your keyboard from English to Japanese. This can result in some pretty funny characters showing up when you type. To switch to the US keyboard,
2. Open System Preferences.
3. Click on the International icon.
4. Click on the Input Menu near the top of the screen.
5. Scroll down the list and uncheck any non-US keyboard layouts.
6. Close the System Preferences. Try typing a few characters. Did is solve the problem?
   Yes: Problem solved.
   No: Replace the keyboard.

The USB port on my keyboard doesn’t work.

1. Unplug all devises from your keyboard.
2. Plug your Apple mouse into the left USB port on your keyboard. Does your mouse work when it’s plugged into this port?

   Yes: Now plug the mouse into the right port. Does it work?
      Yes: Try a known good keyboard.
      No: Try a known good mouse to rule out the mouse. Then go to step 3.
   No: Try a different mouse or keyboard.
3. Now unplug the keyboard from the USB port on the back of the iMac, and plug the mouse into the port the keyboard had been in. Does the mouse work now?
   Yes: Replace the keyboard?
   No: It appears that your USB port isn’t functioning properly. Go on to step 4.
4. Replace the logic board.

My Apple wireless keyboard is not responding correctly.

Refer to Knowledge Base document 86496 - Apple Wireless Keyboard and Mouse: Troubleshooting connection Issues.

Error Beep(s)

Refer to **Power On Self Test (POST)** covered in the General Information section of this manual.

USB

A USB device doesn't work.

1. Please unplug all of your USB devices from your iMac except your Apple Keyboard and Apple mouse.
2. Now plug your device directly into the back of your iMac. Does it work as expected now?

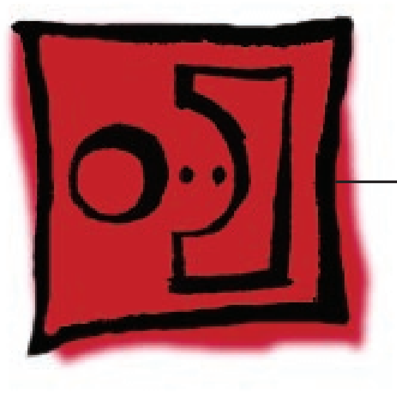
Yes: Your device works when plugged directly into the computer. This indicates a conflict with one of the other USB devices. You can test by gradually adding your devices back and seeing where the issue occurs, then contacting the manufacturer of the device(s)) for assistance.

No: Unplug your device from the iMac and plug the keyboard into the port your device just occupied. Is your keyboard still working?
Yes: Your Apple Keyboard works when plugged into the USB port your device was plugged into. This points to an issue with your device. Please review the documentation that came with your device. Install any necessary drivers and contact the manufacturer of your device for assistance.
No: Replace the logic board

I see a message saying not enough power to function.

It appears that this device needs to be plugged into the computer's USB port, rather than the keyboard USB port. Any USB device connected to the keyboard needs to be either a self-powered device (a USB device with its own AC power supply), or a low-power device (a device that does not need a large amount of voltage to operate). Your device may draw more power than the keyboard can provide.

Service Source



Views

iMac (24-inch Mid 2007)

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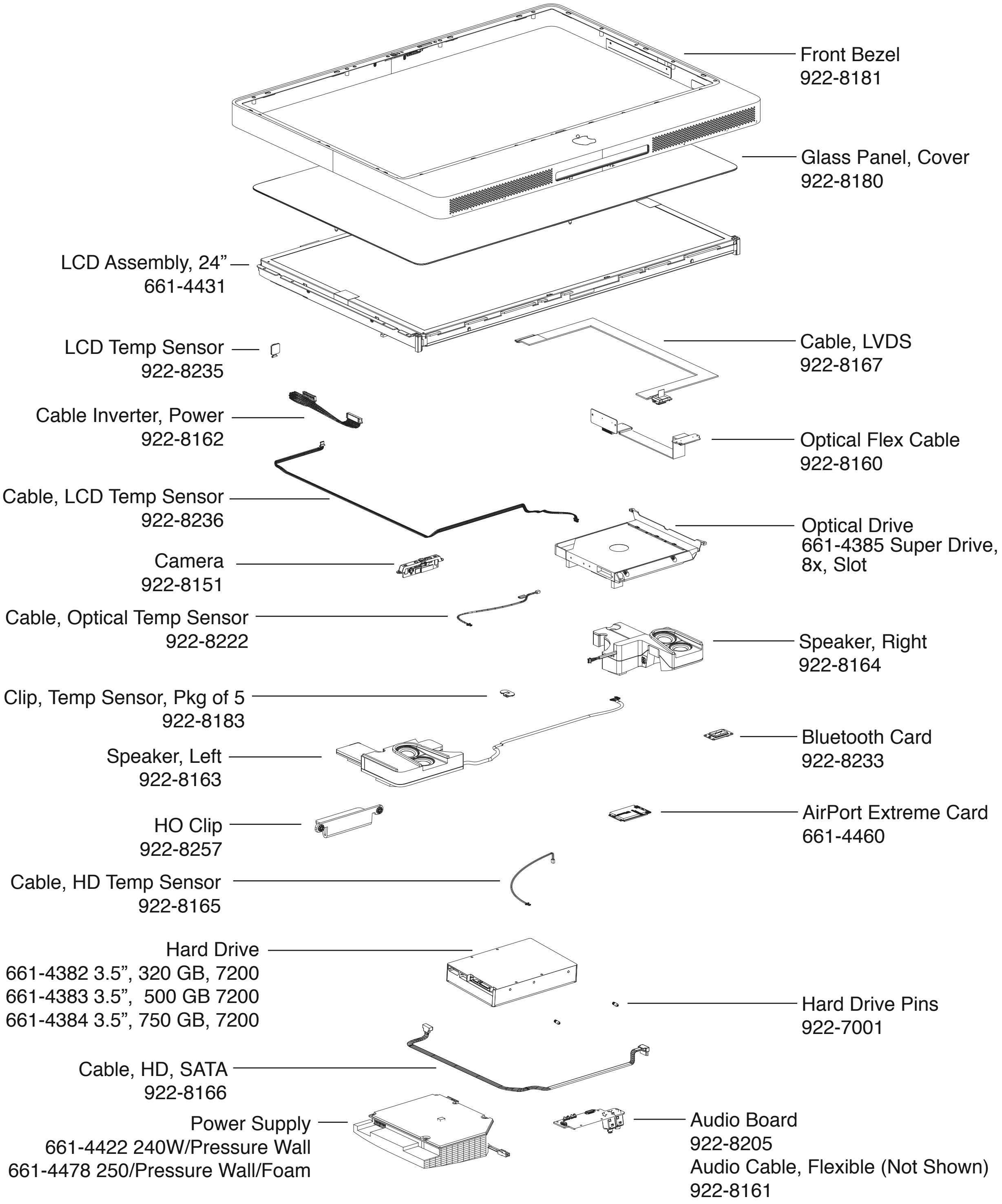
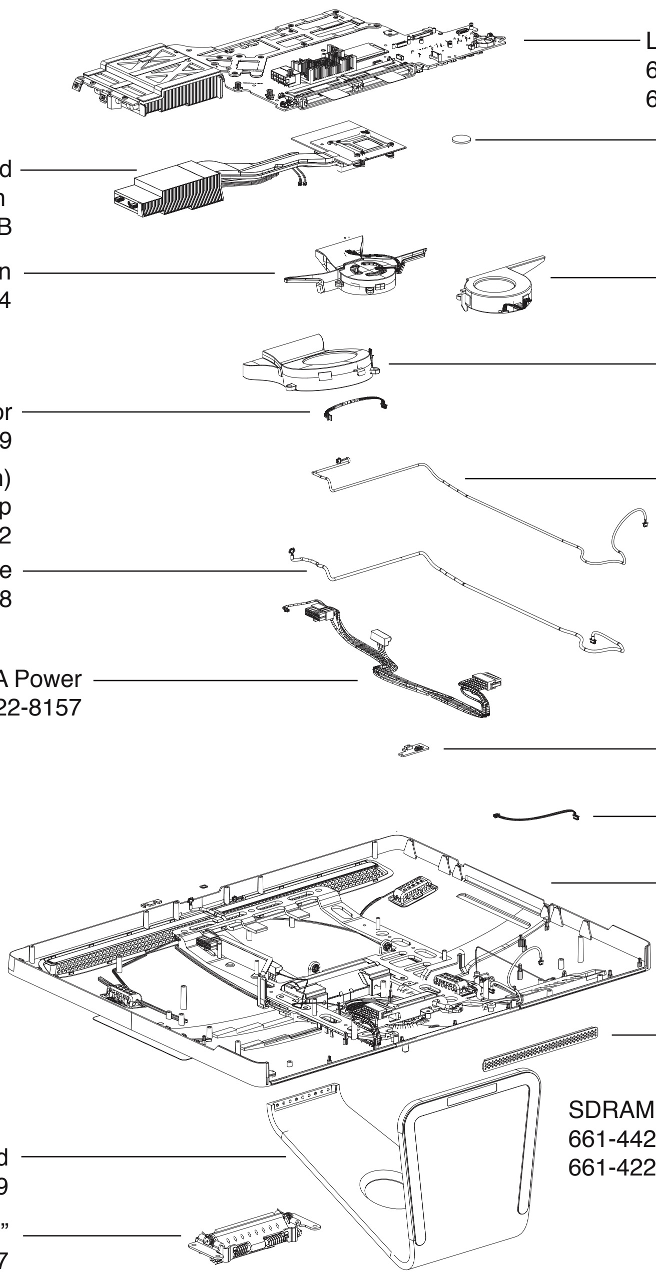
iMac (24-inch 2007)—Upper Exploded View


Front Bezel
922-8181
Glass Panel, Cover
922-8180
LCD Assembly, 24”
661-4431
LCD Temp Sensor
922-8235
Cable, LVDS
922-8167
Cable Inverter, Power
922-8162
Optical Flex Cable
922-8160
Cable, LCD Temp Sensor
922-8236
Optical Drive
661-4385 Super Drive, 8x, Slot
Camera
922-8151
Cable, Optical Temp Sensor
922-8222
Speaker, Right
922-8164
Clip, Temp Sensor, Pkg of 5
922-8183
Bluetooth Card
922-8233
Speaker, Left
922-8163
AirPort Extreme Card
661-4460
HO Clip
922-8257
Cable, HD Temp Sensor
922-8165
Hard Drive
661-4382 3.5”, 320 GB, 7200
661-4383 3.5”, 500 GB 7200
661-4384 3.5”, 750 GB, 7200
Hard Drive Pins
922-7001
Cable, HD, SATA
922-8166
Power Supply
661-4422 240W/Pressure Wall
661-4478 250/Pressure Wall/Foam
Audio Board
922-8205
Audio Cable, Flexible (Not Shown)
922-8161

iMac (24-inch 2007)—Lower Exploded View



Logic Board
661-4428 2.4 GHz, Core 2 Duo
661-4430 2.8 GHz, Core 2 Duo

Battery, Coin
922-6476

Video Card
661-4426 ATI Radeon
HD 2600 Pro, 256 MB

Hard Drive Fan
922-8154

Optical Fan
922-8152

CPU Fan
922-8153

Cable, Ambient Sensor
922-8159

(Not Shown)
Sensor, Ambient Temp
922-7792

Microphone Cable
922-8155

Camera Cable
922-8158

Cable, AC / DC / SATA Power
922-8157

IR Board
922-8169

Cable, IR
922-8156

Rear Cover
922-8182

SDRAM Access Door
922-8186

SDRAM
661-4424 1 GB, DDR2 667, SO-DIMM
661-4225 2 GB, DDR2, 667, SO-DIMM

Stand
922-8179

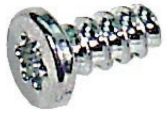
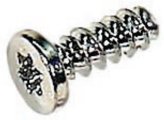
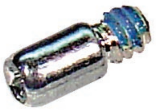
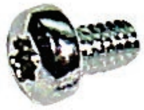
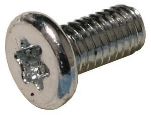
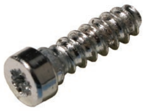
Mechanism, 24”
922-8237

Not Shown:
Power Cord 922-7139
Suction Cups 922-8252
Gloves 922-8253
Mechanism Cover 922-8223
Keyboard, Wired 661-4326
Mouse, Mighty Mouse, Wired 661-4405
Mouse, Mighty Mouse, Wired (Short) 661-4406
Mouse, Mighty Mouse, Wireless 661-4407
Remote, 661-4448

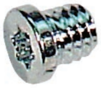
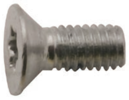
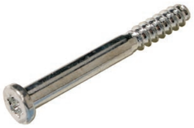
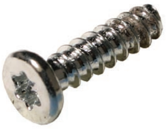
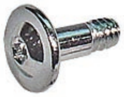
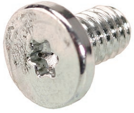
Screw Chart (in Progress!)

Screw Chart: iMac (24-inch 2007): page 1 of 3

Note: Screws are not to scale.

922-6800 T10  - Logic board to rear cover - AC power inlet to rear cover - Power Supply to rear cover	**922-6850 T10**  Chassis to rear cover	**922-7001 T8, round head**  Hard drive pins (2)
922-7010 T6  - Bluetooth card to Logic (2) - AirPort card to Logic (2) - LVDS cable to Logic (2)	**922- T10**  Power supply to rear cover (2)	**922- T8**  LCD panel to rear housing

Screw Chart: iMac (24-inch 2007) page 2 of 3

922-7069 T10  AC power inlet to chassis ground (1)	**922-7813 T10**  Stand to clutch mechanism (8)	**922- T10**
922-7810 T10  Left speaker, 24-inch (1)	**922- T10**  Right speaker, 24-inch (1)	**922- T8**
922- T8	**922-7019 T8**  Hard drive clip to hard drive (2)	**922-7020 T10**  Clutch mechanism to chassis (4)
922- T10, self-tapping	**922- T6**	**922- T6**

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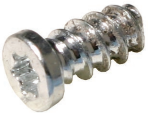
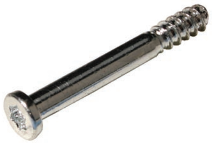
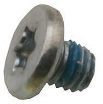
922-7814 T8, self tapping  Logic board to rear cover, each side of memory slot	**922- T**  Logic board to rear cover	**922-7970 T8** Video card to logic board (2)
922-7971 T10  Video card heatsink support (1)		**922-XXXX**